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Section II – Soil and Site Information

**County specific computer generated reports.*

ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Trego County, Kansas: Published

Map symbol	Soil name	Acres	Percent
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063EC	Elkader Silt Loam, 3 To 6 Percent Slopes	230	*
063ED	Elkader And Manvel Silt Loams, 6 To 15 Percent Slopes	463	*
063KP	Kim-Penden Clay Loams, 6 To 15 Percent Slopes	355	*
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063MC	Munjor-Bridgeport Complex, Occasionally Flooded	19	*
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063UC	Ulysses Silt Loam, 3 To 6 Percent Slopes	70	*
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065PO	Penden-Uly Complex, 7 To 20 Percent Slopes	1,596	0.3
065UD	Uly Silt Loam, 6 To 11 Percent Slopes	6	*
065WS	Wakeen-Nibson Silt Loams, 8 To 20 Percent Slopes	12	*
135CC	Campus-Canlon Complex, 2 To 40 Percent Slopes	2,528	0.4
135RS	Roxbury Silt Loam, Frequently Flooded	416	*
135UE	Uly-Coly Silt Loams, 1 To 3 Percent Slopes, Eroded	11	*
AED	Arents, Earthen Dam	108	*
Ap	Armo Loam, 1 To 3 Percent Slopes	16,004	2.8
Ar	Armo Loam, 3 To 7 Percent Slopes	35,969	6.2
As	Armo Loam, 7 To 15 Percent Slopes	31,408	5.4
Bd	Badland-Manvel Complex, 3 To 20 Percent Slopes	5,435	0.9
Bg	Bogue Clay, 8 To 25 Percent Slopes	3,280	0.6
Br	Brownell Gravelly Loam, 2 To 10 Percent Slopes	6,375	1.1
Cc	Campus-Canlon Loams, 6 To 30 Percent Slopes	6,445	1.1
Cf	Carlson Silt Loam, 1 To 3 Percent Slopes	41,503	7.2
Cu	Coly Silt Loam, 2 To 6 Percent Slopes	11,663	2.0
Do	Dorrance Sandy Loam, 3 To 15 Percent Slopes	10,204	1.8
EF	Eltree Silt Loam, 1 To 3 Percent Slopes	66	*
Ha	Harney Silt Loam, 0 To 1 Percent Slopes	83,366	14.5
HB	Harney Silt Loam, 1 To 3 Percent Slopes	2,314	0.4
He	Harney-Mento Silt Loams, 1 To 3 Percent Slopes	14,852	2.6
Hg	Heizer-Brownell Gravelly Loams, 5 To 30 Percent Slopes	20,583	3.6
Hm	Holdrege Silt Loam, 1 To 3 Percent Slopes	82,045	14.2
Ho	Hord Silt Loam, Rarely Flooded	7,309	1.3
Hu	Humbarger Loam, Channeled	23,359	4.1
Hw	Humbarger Loam, Occasionally Flooded	7,478	1.3
If	Inavale Loamy Sand, Channeled	6,312	1.1
Mc	Mccook Silt Loam, Occasionally Flooded	2,716	0.5
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Mu	Munjor Sandy Loam, Occasionally Flooded	7,889	1.4
Pf	Penden Clay Loam, 3 To 7 Percent Slopes	40,675	7.1
Pk	Penden Clay Loam, 3 To 7 Percent Slopes, Eroded	16,974	2.9
Po	Penden Loam, 7 To 15 Percent Slopes	41,161	7.1
Rf	Roxbury Silt Loam, Rarely Flooded	2,248	0.4
Ub	Uly Silt Loam, 1 To 3 Percent Slopes	8,124	1.4
Uc	Uly Silt Loam, 3 To 6 Percent Slopes	16,477	2.9
Vo	Voda Silty Clay Loam, Occasionally Flooded	3,499	0.6
W	Water	1,422	0.2
Wb	Wakeen Silt Loam, 1 To 3 Percent Slopes	2,411	0.4
Wp	Wakeen-Nibson Silt Loams, 3 To 8 Percent Slopes	5,533	1.0
	Total	576,416	100.0

* Less than 0.1 percent.

NONTECHNICAL SOIL DESCRIPTIONS
Trego County, Kansas

Nontechnical soil descriptions describe soil properties or management considerations specific to a soil map unit or group of map units, shown in the NonTechnical Descriptions report. These descriptions are written in terminology that Non-technical users of soil survey information can understand.
Nontechnical soil descriptions are a powerful tool for creating reports. These high quality, easy to read reports can be generated by conservation planners and other NRCS employees for distribution to land users. Soil map unit descriptions and National Soil Information System records are the basis for these descriptions.

051AO Armo Loam, 3 To 7 Percent Slopes, Eroded

Armo soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is medium. The parent material consists of calcareous loamy colluvium derived from limestone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 4e.

051BG Bogue Clay, 3 To 8 Percent Slopes

Bogue soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping hillslope on upland. The runoff class is very high. The parent material consists of residuum weathered from shale. The soil is 20 to 40 inches deep to bedrock (paralithic). This soil is moderately well drained. The slowest permeability is very slow. It has a low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Blue Shale (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

051CC Campus-Carlson Complex, 3 To 7 Percent Slopes

Campus soil makes up 65 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is low. The parent material consists of old calcareous fine-loamy alluvium and/or calcareous fine-loamy residuum. The soil is 20 to 40 inches deep to bedrock (lithic). This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 45 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 4e.

Carlson soil makes up 35 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping ridge on upland. The runoff class is low. The parent material consists of loess over old loamy alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 15 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

051CD Campus-Penden Complex, 5 To 15 Percent Slopes

Campus soil makes up 55 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of old calcareous fine-loamy alluvium and/or calcareous fine-loamy residuum. The soil is 20 to 40 inches deep to bedrock (lithic). This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 45 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

Penden soil makes up 45 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of fine-loamy residuum weathered from calcareous sandstone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 30 percent calcium carbonate. This soil is in the Shallow Limy (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

051EG Eltree Silt Loam, 3 To 7 Percent Slopes

Eltree soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping terrace on river valley. The runoff class is medium. The parent material consists of calcareous silty alluvium and/or calcareous silty colluvium. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 15 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

051HC Harney Silt Loam, 3 To 7 Percent Slopes

Harney soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping plain on tableland. The runoff class is medium. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

051HD Harney Silty Clay Loam, 2 To 5 Percent Slopes, Eroded

Harney soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 4e.

051HE Harney-Armo Complex, 3 To 7 Percent Slopes, Eroded

Harney soil makes up 50 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping plain on tableland. The runoff class is medium. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 4e.

Armo soil makes up 50 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is medium. The parent material consists of calcareous loamy colluvium derived from limestone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 4e.

051HK Harney-Wakeen Silt Loams, 1 To 3 Percent Slopes

Harney soil makes up 60 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Wakeen soil makes up 40 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping hillslope on upland. The runoff class is low. The parent material consists of calcareous fine-silty residuum weathered from chalk. The soil is 20 to 40 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 40 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

051HL Heizer-Armo Complex, 8 To 25 Percent Slopes

Heizer soil makes up 50 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a strongly sloping to steep hillslope on upland. The runoff class is medium. The parent material consists of calcareous residuum weathered from limestone. The soil is 10 to 20 inches deep to bedrock (lithic). This soil is somewhat excessively drained. The slowest permeability is moderate. It has a very low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 65 percent calcium carbonate. This soil is in the Shallow Limy (pe20-26) range site. It is in the nonirrigated land capability classification 7s.

Armo soil makes up 50 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a strongly sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of calcareous loamy colluvium derived from limestone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

051MO Mento Soils, 3 To 7 Percent Slopes, Eroded

Mento soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping divide on upland. The runoff class is high. The parent material consists of loess over residuum weathered from limestone. This soil is well drained. The slowest permeability is slow. It has a moderate available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil contains a very slightly saline horizon, This soil is in the Clay Upland (pe20-26) range site. It is in the nonirrigated land capability classification 4e.

051WH Wakeen Silt Loam, 3 To 7 Percent Slopes

Wakeen soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is medium. The parent material consists of calcareous fine-silty residuum weathered from chalk. The soil is 20 to 40 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 40 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 4e.

063BR Bridgeport Silt Loam, Occasionally Flooded

Bridgeport soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping terrace on river valley. The runoff class is low. The parent material consists of calcareous fine-silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Lowland (pe16-20) range site. This soil is in the irrigated land capability class 2w. It is in the nonirrigated land capability classification 2w.

063EB Elkader Silt Loam, 1 To 3 Percent Slopes

Elkader soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping fan on upland. The runoff class is low. The parent material consists of calcareous silty residuum. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 50 percent calcium carbonate. This soil contains a moderately saline horizon, This soil is in the Limy Upland (pe16-20) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

063EC Elkader Silt Loam, 3 To 6 Percent Slopes

Elkader soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping fan on upland. The runoff class is medium. The parent material consists of calcareous silty residuum. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 50 percent calcium carbonate. This soil contains a moderately saline horizon, This soil is in the Limy Upland (pe16-20) range site. It is in the nonirrigated land capability classification 3e.

063ED Elkader And Manvel Silt Loams, 6 To 15 Percent Slopes

Elkader soil makes up 55 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep fan on upland. The runoff class is medium. The parent material consists of calcareous silty residuum. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 50 percent calcium carbonate. This soil contains a moderately saline horizon, This soil is in the Limy Upland (pe16-20) range site. It is in the nonirrigated land capability classification 6e.

Manvel soil makes up 45 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping fan on upland. The runoff class is medium. The parent material consists of calcareous fine-silty colluvium derived from chalk. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 20 percent calcium carbonate. This soil contains a very slightly saline horizon, This soil is in the Chalk Flats (pe16-20) range site. This soil is in the irrigated land capability class 4e. It is in the nonirrigated land capability classification 6e.

063KP Kim-Penden Clay Loams, 6 To 15 Percent Slopes

Kim soil makes up 60 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of sandy and/or loamy alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 15 percent calcium carbonate. This soil contains a very slightly saline horizon, This soil is in the Limy Upland (pe16-20) range site. This soil is in the irrigated land capability class 4e. It is in the nonirrigated land capability classification 6e.

Penden soil makes up 40 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of fine-loamy residuum weathered from calcareous sandstone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 30 percent calcium carbonate. This soil is in the Limy Upland (pe16-20) range site. It is in the nonirrigated land capability classification 6e.

063MA Manvel Silt Loam, 1 To 3 Percent Slopes

Manvel soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping fan on upland. The runoff class is low. The parent material consists of calcareous fine-silty colluvium derived from chalk. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 20 percent calcium carbonate. This soil contains a very slightly saline horizon, This soil is in the Chalk Flats (pe16-20) range site. It is in the nonirrigated land capability classification 4e.

063MB Manvel-Badland Complex, 6 To 40 Percent Slopes

Manvel soil makes up 65 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping fan on upland. The runoff class is medium. The parent material consists of calcareous fine-silty colluvium derived from chalk. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 20 percent calcium carbonate. This soil contains a very slightly saline horizon, This soil is in the Chalk Flats (pe16-20) range site. This soil is in the irrigated land capability class 4e. It is in the nonirrigated land capability classification 6e.

Badland soil makes up 35 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to steep erosion remnant on badlands. The runoff class is high. The parent material consists of calcareous residuum weathered from chalk. The soil is 0 to 3 inches deep to bedrock (paralithic). This soil is excessively drained. It has a very low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. It is in the nonirrigated land capability classification .

063MC Munjor-Bridgeport Complex, Occasionally Flooded

Munjor soil makes up 60 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level stream terrace on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Sandy Lowland (pe16-20) range site. It is in the nonirrigated land capability classification 3w.

Bridgeport soil makes up 40 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level flood plain on river valley. The runoff class is low. The parent material consists of calcareous fine-silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Sandy Lowland (pe16-20) range site. This soil is in the irrigated land capability class 2w. It is in the nonirrigated land capability classification 2w.

063MD Munjor-Inavale Complex, Occasionally Flooded

Munjor soil makes up 55 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Sandy Lowland (pe16-20) range site. It is in the nonirrigated land capability classification 3w.

Inavale soil makes up 45 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is very low. The parent material consists of sandy alluvium. This soil is somewhat excessively drained. The slowest permeability is rapid. It has a low available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Sandy Lowland (pe16-20) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 4e.

063OT Otero Fine Sandy Loam, 1 To 4 Percent Slopes

Otero soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping summit hillslope on upland. The runoff class is very low. The parent material consists of coarse-loamy eolian deposits. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 15 percent calcium carbonate. This soil contains a very slightly saline horizon, This soil is in the Sandy (pe16-20) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 4e.

063UB Ulysses Silt Loam, 1 To 3 Percent Slopes

Ulysses soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping ridge on upland. The runoff class is low. The parent material consists of fine-silty calcareous loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 15 percent calcium carbonate. This soil is in the Loamy Upland (pe16-20) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

063UC Ulysses Silt Loam, 3 To 6 Percent Slopes

Ulysses soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 15 percent calcium carbonate. This soil is in the Loamy Upland (pe16-20) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

065PH Penden Loam, 3 To 8 Percent Slopes

Penden soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping hillslope on upland. The runoff class is medium. The parent material consists of fine-loamy residuum weathered from calcareous sandstone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 30 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

065PO Penden-Uly Complex, 7 To 20 Percent Slopes

Penden soil makes up 65 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a strongly sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of fine-loamy residuum weathered from calcareous sandstone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 35 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

Uly soil makes up 35 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a strongly sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of fine-silty loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

065UD Uly Silt Loam, 6 To 11 Percent Slopes

Uly soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping hillslope on upland. The runoff class is medium. The parent material consists of fine-silty loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 4e. It is in the nonirrigated land capability classification 4e.

065WS Wakeen-Nibson Silt Loams, 8 To 20 Percent Slopes

Wakeen soil makes up 60 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of calcareous fine-silty residuum weathered from chalk. The soil is 20 to 40 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 40 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

Nibson soil makes up 40 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of calcareous loamy residuum weathered from limestone and shale. The soil is 10 to 20 inches deep to bedrock (paralithic). This soil is somewhat excessively drained. The slowest permeability is moderate. It has a very low available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 40 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

135CC Campus-Canlon Complex, 2 To 40 Percent Slopes

Campus soil makes up 65 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping to moderately steep plain on tableland. The runoff class is medium. The parent material consists of old calcareous fine-loamy alluvium and/or calcareous fine-loamy residuum. The soil is 20 to 40 inches deep to bedrock (lithic). This soil is well drained. The slowest permeability is moderate. It has a low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 30 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

Canlon soil makes up 35 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping to steep plain on tableland. The runoff class is medium. The parent material consists of calcareous loamy residuum weathered from sandstone. The soil is 10 to 20 inches deep to bedrock (lithic). This soil is well drained. The slowest permeability is moderate. It has a very low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 25 percent calcium carbonate. This soil is in the Shallow Limy (pe20-26) range site. It is in the nonirrigated land capability classification 6s.

135RS Roxbury Silt Loam, Frequently Flooded

Roxbury soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is low. The parent material consists of calcareous fine-silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a moderate shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Lowland (pe20-26) range site. This soil is in the irrigated land capability class 2w. It is in the nonirrigated land capability classification 2w.

135UE Uly-Coly Silt Loams, 1 To 3 Percent Slopes, Eroded

Uly soil makes up 60 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

Coly soil makes up 40 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 15 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

Ap Armo Loam, 1 To 3 Percent Slopes

Armo soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping hillslope on upland. The runoff class is low. The parent material consists of calcareous loamy colluvium derived from limestone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 2e.

Ar Armo Loam, 3 To 7 Percent Slopes

Armo soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is medium. The parent material consists of calcareous loamy colluvium derived from limestone. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

As Armo Loam, 7 To 15 Percent Slopes

Armo soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a strongly sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of calcareous loamy colluvium derived from limestone. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

Bd Badland-Manvel Complex, 3 To 20 Percent Slopes

Manvel soil makes up 30 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping fan on upland. The runoff class is medium. The parent material consists of calcareous fine-silty colluvium derived from chalk. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 20 percent calcium carbonate. This soil contains a very slightly saline horizon, This soil is in the Chalk Flats (pe20-26) range site. This soil is in the irrigated land capability class 4e. It is in the nonirrigated land capability classification 6.

Bg Bogue Clay, 8 To 25 Percent Slopes

Bogue soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a strongly sloping to steep hillslope on upland. The runoff class is very high. The parent material consists of residuum weathered from shale. The soil is 20 to 40 inches deep to bedrock (paralithic). This soil is moderately well drained. The slowest permeability is very slow. It has a very low available water capacity and a high shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Blue Shale (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

Br Brownell Gravelly Loam, 2 To 10 Percent Slopes

Brownell soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping to strongly sloping hillslope on upland. The runoff class is very low. The parent material consists of calcareous residuum weathered from limestone. The soil is 20 to 40 inches deep to bedrock (lithic). This soil is well drained. The slowest permeability is moderate. It has a low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 65 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

Cc Campus-Canlon Loams, 6 To 30 Percent Slopes

Campus soil makes up 70 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of old calcareous fine-loamy alluvium and/or calcareous fine-loamy residuum. The soil is 20 to 40 inches deep to bedrock (lithic). This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 45 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

Canlon soil makes up 30 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to steep escarpment on upland. The runoff class is medium. The parent material consists of calcareous loamy residuum weathered from sandstone. The soil is 10 to 20 inches deep to bedrock (lithic). This soil is somewhat excessively drained. The slowest permeability is moderate. It has a low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 25 percent calcium carbonate. This soil is in the Shallow Limy (pe20-26) range site. It is in the nonirrigated land capability classification 7s.

Cf Carlson Silt Loam, 1 To 3 Percent Slopes

Carlson soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping ridge on upland. The runoff class is low. The parent material consists of loess over old loamy alluvium. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 15 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Cu Coly Silt Loam, 2 To 6 Percent Slopes

Coly soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping to moderately sloping hillslope on upland. The runoff class is low. The parent material consists of fine-silty calcareous loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

Do Dorrance Sandy Loam, 3 To 15 Percent Slopes

Dorrance soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep hillslope on upland. The runoff class is low. The parent material consists of mixed loamy alluvium. This soil is excessively drained. The slowest permeability is moderately rapid. It has a low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 15 percent calcium carbonate. This soil is in the Sands (pe20-26) range site. This soil is in the irrigated land capability class 6s. It is in the nonirrigated land capability classification 6s.

EF Eltree Silt Loam, 1 To 3 Percent Slopes

Eltree soil makes up 100 percent of the map unit. This map unit is in the This soil occurs on a gently sloping terrace on river valley. The runoff class is low. The parent material consists of calcareous silty alluvium and/or calcareous silty colluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 15 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Ha Harney Silt Loam, 0 To 1 Percent Slopes

Harney soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2c.

HB Harney Silt Loam, 1 To 3 Percent Slopes

Harney soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

He Harney-Mento Silt Loams, 1 To 3 Percent Slopes

Harney soil makes up 70 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderately slow. It has a high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Mento soil makes up 30 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping divide on upland. The runoff class is low. The parent material consists of loess over residuum weathered from limestone. This soil is well drained. The slowest permeability is slow. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil contains a slightly saline horizon, This soil is in the Clay Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

Hg Heizer-Brownell Gravelly Loams, 5 To 30 Percent Slopes

Heizer soil makes up 60 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a strongly sloping to steep hillslope on upland. The runoff class is medium. The parent material consists of calcareous residuum weathered from limestone. The soil is 10 to 20 inches deep to bedrock (lithic). This soil is somewhat excessively drained. The slowest permeability is moderate. It has a very low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 65 percent calcium carbonate. This soil is in the Shallow Limy (pe20-26) range site. It is in the nonirrigated land capability classification 7s.

Brownell soil makes up 40 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of calcareous residuum weathered from limestone. The soil is 20 to 40 inches deep to bedrock (lithic). This soil is well drained. The slowest permeability is moderate. It has a very low available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 65 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

NONTECHNICAL SOIL DESCRIPTIONS--Continued
Trego County, Kansas

Hm Holdrege Silt Loam, 1 To 3 Percent Slopes

Holdrege soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is low. The parent material consists of calcareous loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Ho Hord Silt Loam, Rarely Flooded

Hord soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level terrace on river valley. The runoff class is low. The parent material consists of fine-silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Terrace (pe20-26) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2c.

Hu Humbarger Loam, Channeled

Humbarger soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is low. The parent material consists of calcareous loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is frequently flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Lowland (pe20-26) range site. It is in the nonirrigated land capability classification 5w.

Hw Humbarger Loam, Occasionally Flooded

Humbarger soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is low. The parent material consists of calcareous fine-loamy alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Loamy Lowland (pe20-26) range site. This soil is in the irrigated land capability class 2w. It is in the nonirrigated land capability classification 2w.

If Inavale Loamy Sand, Channeled

Inavale soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is negligible. The parent material consists of sandy alluvium. This soil is excessively drained. The slowest permeability is rapid. It has a low available water capacity and a low shrink swell potential. This soil is frequently flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 5 percent calcium carbonate. This soil is in the Sandy Lowland (pe20-26) range site. It is in the nonirrigated land capability classification 6w.

Mc Mccook Silt Loam, Occasionally Flooded

Mccook soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping stream terrace on river valley. The runoff class is low. The parent material consists of weakly stratified calcareous coarse-silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Lowland (pe20-26) range site. This soil is in the irrigated land capability class 2w. It is in the nonirrigated land capability classification 2w.

MD Mccook Silt Loam, Rarely Flooded

Mccook soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level stream terrace on river valley. The runoff class is low. The parent material consists of weakly stratified calcareous coarse-silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a low shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Terrace (pe20-26) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2c.

Mu Munjor Sandy Loam, Occasionally Flooded

Munjor soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is very low. The parent material consists of loamy alluvium. This soil is well drained. The slowest permeability is moderately rapid. It has a moderate available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Sandy Lowland (pe20-26) range site. It is in the nonirrigated land capability classification 3w.

NONTECHNICAL SOIL DESCRIPTIONS--Continued
Trego County, Kansas

Pf Penden Clay Loam, 3 To 7 Percent Slopes

Penden soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is medium. The parent material consists of fine-loamy residuum weathered from calcareous sandstone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 30 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

Pk Penden Clay Loam, 3 To 7 Percent Slopes, Eroded

Penden soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is low. The parent material consists of fine-loamy residuum weathered from calcareous sandstone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 30 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 4e.

Po Penden Loam, 7 To 15 Percent Slopes

Penden soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a strongly sloping to moderately steep hillslope on upland. The runoff class is medium. The parent material consists of fine-loamy residuum weathered from calcareous sandstone. This soil is well drained. The slowest permeability is moderate. It has a high available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 30 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 6e.

Rf Roxbury Silt Loam, Rarely Flooded

Roxbury soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level stream terrace on river valley. The runoff class is low. The parent material consists of calcareous fine-silty alluvium. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a moderate shrink swell potential. This soil is rarely flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Terrace (pe20-26) range site. This soil is in the irrigated land capability class 1 It is in the nonirrigated land capability classification 2c.

Ub Uly Silt Loam, 1 To 3 Percent Slopes

Uly soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping plain on tableland. The runoff class is low. The parent material consists of loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 2e. It is in the nonirrigated land capability classification 2e.

Uc Uly Silt Loam, 3 To 6 Percent Slopes

Uly soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping hillslope on upland. The runoff class is medium. The parent material consists of fine-silty loess. This soil is well drained. The slowest permeability is moderate. It has a very high available water capacity and a low shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 10 percent calcium carbonate. This soil is in the Loamy Upland (pe20-26) range site. This soil is in the irrigated land capability class 3e. It is in the nonirrigated land capability classification 3e.

Vo Voda Silty Clay Loam, Occasionally Flooded

Voda soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a nearly level to gently sloping flood plain on river valley. The runoff class is medium. The parent material consists of clayey lacustrine deposits over loamy lacustrine deposits. This soil is somewhat poorly drained. The slowest permeability is slow. It has a high available water capacity and a low shrink swell potential. This soil is occasionally flooded and is not ponded. The top of the seasonal high water table is at 21 inches. The soil contains a maximum amount of 30 percent calcium carbonate. This soil is in the Clay Lowland (pe20-26) range site. It is in the nonirrigated land capability classification 2w.

Wb Wakeen Silt Loam, 1 To 3 Percent Slopes

Wakeen soil makes up 100 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a gently sloping hillslope on upland. The runoff class is low. The parent material consists of calcareous fine-silty residuum weathered from limestone. The soil is 20 to 40 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 40 percent calcium carbonate. This soil is in the Limy Upland (pe20-26) range site. It is in the nonirrigated land capability classification 3e.

NONTECHNICAL SOIL DESCRIPTIONS--Continued
Trego County, Kansas

Wp Wakeen–Nibson Silt Loams, 3 To 8 Percent Slopes

Wakeen soil makes up 70 percent of the map unit. This map unit is in the Rolling Plains and Breaks Major Land Resource Area. This soil occurs on a moderately sloping to strongly sloping hillslope on upland. The runoff class is medium. The parent material consists of calcareous fine–silty residuum weathered from chalk. The soil is 20 to 40 inches deep to bedrock (paralithic). This soil is well drained. The slowest permeability is moderate. It has a moderate available water capacity and a moderate shrink swell potential. This soil is not flooded and is not ponded. The seasonal high water table is at a depth of more than 6 feet. The soil contains a maximum amount of 40 percent calcium carbonate. This soil is in the Limy Upland (pe20–26) range site. It is in the nonirrigated land capability classification 4e.

051AO—Armo loam, 3 to 7 percent slopes, eroded

Map Unit Composition

Armo: 100 percent

Component Descriptions

Armo
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous loamy colluvium derived from limestone
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 5 inches; loam
H2—5 to 23 inches; clay loam
H3—23 to 41 inches; clay loam
H4—41 to 51 inches; silt loam
H5—51 to 60 inches; very gravelly loam

051BG—Bogue clay, 3 to 8 percent slopes

Map Unit Composition

Bogue: 100 percent

Component Descriptions

Bogue
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Residuum weathered from shale
Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Low (About 3.4 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Blue Shale (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 6 inches; clay
H2—6 to 17 inches; clay
H3—17 to 23 inches; clay
H4—23 to 32 inches; weathered bedrock
Cr—32 to 32 inches; unweathered bedrock

051CC—Campus-Carlson complex, 3 to 7 percent slopes

Map Unit Composition

Campus: 65 percent
Carlson: 35 percent

Component Descriptions

Campus
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Old calcareous fine-loamy alluvium and/or calcareous fine-loamy residuum
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 9 inches; loam
H2—9 to 19 inches; clay loam
H3—19 to 33 inches; loam
R—33 to 33 inches; unweathered bedrock

Carlson
MLRA: 73 - Rolling Plains and Breaks
Landform: Ridge on upland
Parent material: Loess over old loamy alluvium
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.8 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 8 inches; silt loam
H2—8 to 18 inches; silty clay loam
H3—18 to 60 inches; silty clay loam

Minor Components
Unnamed Hydric Soils

051CD—Campus-Penden complex, 5 to 15 percent slopes

Map Unit Composition

Campus: 55 percent
Penden: 45 percent

Component Descriptions

Campus
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Old calcareous fine-loamy alluvium and/or calcareous fine-loamy residuum
Slope: 5 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 9 inches; loam
H2—9 to 19 inches; clay loam
H3—19 to 33 inches; loam
R—33 to 33 inches; unweathered bedrock

Penden
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-loamy residuum weathered from calcareous sandstone
Slope: 5 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.5 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Shallow Limy (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 14 inches; clay loam
H2—14 to 27 inches; clay loam
H3—27 to 64 inches; clay loam

Minor Components
Unnamed Hydric Soils

051EG—Eltree silt loam, 3 to 7 percent slopes

Map Unit Composition

Eltree: 100 percent

Component Descriptions

Eltree
MLRA: 73 - Rolling Plains and Breaks
Landform: Terrace on river valley
Parent material: Calcareous silty alluvium and/or calcareous silty colluvium
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 26 inches; silt loam
H2—26 to 35 inches; silt loam
H3—35 to 63 inches; silty clay loam

051HC—Harney silt loam, 3 to 7 percent slopes

Map Unit Composition

Harney: 100 percent

Component Descriptions

Harney
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 6 inches; silt loam
H2—6 to 40 inches; silty clay loam
H3—40 to 74 inches; silty clay loam

051HD—Harney silty clay loam, 2 to 5 percent slopes, eroded

Map Unit Composition

Harney: 100 percent

Component Descriptions

Harney
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 2 to 5 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe20-26)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 6 inches; silty clay loam
H2—6 to 40 inches; silty clay loam
H3—40 to 74 inches; silty clay loam

051HE—Harney-Armo complex, 3 to 7 percent slopes, eroded

Map Unit Composition

Harney: 50 percent
Armo: 50 percent

Component Descriptions

Harney
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe20-26)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 6 inches; silt loam
H2—6 to 40 inches; silty clay loam
H3—40 to 74 inches; silty clay loam

Armo
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous loamy colluvium derived from limestone
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 5 inches; loam
H2—5 to 23 inches; clay loam
H3—23 to 41 inches; clay loam
H4—41 to 51 inches; silt loam
H5—51 to 60 inches; very gravelly loam

051HK—Harney-Wakeen silt loams, 1 to 3 percent slopes

Map Unit Composition

Harney: 60 percent
Wakeen: 40 percent

Component Descriptions

Harney
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe20-26)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 6 inches; silt loam
H2—6 to 40 inches; silty clay loam
H3—40 to 74 inches; silt loam

Wakeen
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous fine-silty residuum weathered from chalk
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 7.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low

Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 5 inches; silt loam
H2—5 to 36 inches; silty clay loam
Cr—36 to 36 inches; unweathered bedrock

051HL—Heizer-Armo complex, 8 to 25 percent slopes

Map Unit Composition

Heizer: 50 percent
Armo: 50 percent

Component Descriptions

Heizer
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous residuum weathered from limestone
Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very low (About 1.6 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Shallow Limy (pe20-26)
Land capability (nonirrigated): 7s

Typical Profile:
H1—0 to 6 inches; gravelly loam
H2—6 to 14 inches; very channery loam
R—14 to 14 inches; unweathered bedrock

Armo
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous loamy colluvium derived from limestone
Slope: 8 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.5 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 15 inches; loam
H2—15 to 28 inches; clay loam
H3—28 to 41 inches; clay loam
H4—41 to 51 inches; silt loam
H5—51 to 60 inches; very gravelly loam

051MO—Mento Soils, 3 to 7 percent slopes, eroded

Map Unit Composition

Mento: 100 percent

Component Descriptions

Mento
MLRA: 73 - Rolling Plains and Breaks
Landform: Divide on upland
Parent material: Loess over residuum weathered from limestone
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: Moderate (About 8.7 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: High
Ecological site: Clay Upland (pe20-26)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 6 inches; silty clay loam
H2—6 to 20 inches; silty clay loam
H3—20 to 48 inches; silty clay loam
H4—48 to 67 inches; weathered bedrock
H5—67 to 71 inches; unweathered bedrock

051WH—Wakeen silt loam, 3 to 7 percent slopes

Map Unit Composition

Wakeen: 100 percent

Component Descriptions

Wakeen
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous fine-silty residuum weathered from chalk
Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 11 inches; silt loam
H2—11 to 30 inches; silty clay loam
Cr—30 to 30 inches; unweathered bedrock

063BR—Bridgeport silt loam, occasionally flooded

Map Unit Composition

Bridgeport: 100 percent

Component Descriptions

Bridgeport
MLRA: 73 - Rolling Plains and Breaks
Landform: Terrace on river valley
Parent material: Calcareous fine-silty alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe16-20)
Land capability (irrigated): 2w
Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 13 inches; silt loam
H2—13 to 60 inches; silt loam

063EB—Elkader silt loam, 1 to 3 percent slopes

Map Unit Composition

Elkader: 100 percent

Component Descriptions

Elkader
MLRA: 73 - Rolling Plains and Breaks
Landform: Fan on upland
Parent material: Calcareous silty residuum
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.6 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Limy Upland (pe16-20)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 9 inches; silt loam
H2—9 to 20 inches; silt loam
H3—20 to 60 inches; silt loam

063EC—Elkader silt loam, 3 to 6 percent slopes

Map Unit Composition

Elkader: 100 percent

Component Descriptions

Elkader
MLRA: 73 - Rolling Plains and Breaks
Landform: Fan on upland
Parent material: Calcareous silty residuum
Slope: 3 to 6 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.6 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe16-20)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 9 inches; silt loam
H2—9 to 20 inches; silt loam
H3—20 to 60 inches; silt loam

063ED—Elkader And Manvel silt loams, 6 to 15 percent slopes

Map Unit Composition

Elkader: 55 percent
Manvel: 45 percent

Component Descriptions

Elkader
MLRA: 73 - Rolling Plains and Breaks
Landform: Fan on upland
Parent material: Calcareous silty residuum
Slope: 6 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.6 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe16-20)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 9 inches; silt loam
H2—9 to 20 inches; silt loam
H3—20 to 60 inches; silt loam

Manvel
MLRA: 73 - Rolling Plains and Breaks
Landform: Fan on upland
Parent material: Calcareous fine-silty colluvium derived from chalk
Slope: 6 to 10 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.1 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Chalk Flats (pe16-20)
Land capability (irrigated): 4e
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 3 inches; silt loam
H2—3 to 60 inches; silt loam

063KP—Kim-Penden clay loams, 6 to 15 percent slopes

Map Unit Composition

Kim: 60 percent
Penden: 40 percent

Component Descriptions

Kim
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Sandy and/or loamy alluvium

Slope: 6 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 9.6 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe16-20)
Land capability (irrigated): 4e
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 5 inches; clay loam
H2—5 to 60 inches; clay loam

Penden
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-loamy residuum weathered from calcareous sandstone
Slope: 6 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe16-20)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 10 inches; clay loam
H2—10 to 28 inches; clay loam
H3—28 to 60 inches; clay loam

063MA—Manvel silt loam, 1 to 3 percent slopes

Map Unit Composition

Manvel: 100 percent

Component Descriptions

Manvel
MLRA: 73 - Rolling Plains and Breaks
Landform: Fan on upland
Parent material: Calcareous fine-silty colluvium derived from chalk
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.1 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Chalk Flats (pe16-20)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 3 inches; silt loam
H2—3 to 60 inches; silt loam

063MB—Manvel-Badland complex, 6 to 40 percent slopes

Map Unit Composition

Manvel: 65 percent
Badland: 35 percent

Component Descriptions

Manvel
MLRA: 73 - Rolling Plains and Breaks
Landform: Fan on upland
Parent material: Calcareous fine-silty colluvium derived from chalk
Slope: 6 to 10 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.1 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Chalk Flats (pe16-20)

Land capability (irrigated): 4e
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 3 inches; silt loam
H2—3 to 60 inches; silt loam

Badland
MLRA: 73 - Rolling Plains and Breaks
Landform: Erosion remnant on badlands
Parent material: Calcareous residuum weathered from chalk
Slope: 6 to 40 percent
Depth to restrictive feature: 0 to 3 inches to bedrock (paralithic)
Drainage class: Excessively drained
Depth to seasonal water saturation: More than 6 feet
Runoff class: High

Typical Profile:
C—0 to 1 inches; silt loam

063MC—Munjor-Bridgeport complex, occasionally flooded

Map Unit Composition

Munjor: 60 percent
Bridgeport: 40 percent

Component Descriptions

Munjor
MLRA: 73 - Rolling Plains and Breaks
Landform: Stream terrace on river valley
Parent material: Loamy alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Moderate (About 7.7 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sandy Lowland (pe16-20)
Land capability (nonirrigated): 3w

Typical Profile:
H1—0 to 11 inches; sandy loam
H2—11 to 36 inches; sandy loam
H3—36 to 60 inches; sand

Bridgeport
MLRA: 73 - Rolling Plains and Breaks
Landform: Flood plain on river valley
Parent material: Calcareous fine-silty alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.4 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sandy Lowland (pe16-20)
Land capability (irrigated): 2w
Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 13 inches; fine sandy loam
H2—13 to 60 inches; silt loam

063MD—Munjor-Inavale complex, occasionally flooded

Map Unit Composition

Munjor: 55 percent
Inavale: 45 percent

Component Descriptions

Munjor
MLRA: 73 - Rolling Plains and Breaks
Landform: Flood plain on river valley
Parent material: Loamy alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Moderate (About 7.7 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sandy Lowland (pe16-20)
Land capability (nonirrigated): 3w

Typical Profile:
H1—0 to 11 inches; sandy loam
H2—11 to 36 inches; sandy loam
H3—36 to 60 inches; sand

Inavale
MLRA: 73 - Rolling Plains and Breaks
Landform: Flood plain on river valley
Parent material: Sandy alluvium
Slope: 0 to 2 percent
Drainage class: Somewhat excessively drained
Slowest permeability: Rapid (About 5.95 in/hr)
Available water capacity: Low (About 5.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sandy Lowland (pe16-20)
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 7 inches; loamy sand
H2—7 to 18 inches; loamy sand
H3—18 to 60 inches; loamy sand

063OT—Otero fine sandy loam, 1 to 4 percent slopes

Map Unit Composition

Otero: 100 percent

Component Descriptions

Otero
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Hillslope position: Summit
Parent material: Coarse-loamy eolian deposits
Slope: 0 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Moderate (About 6.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sandy (pe16-20)
Land capability (irrigated): 3e
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 6 inches; fine sandy loam
H2—6 to 60 inches; sandy loam

063UB—Ulysses silt loam, 1 to 3 percent slopes

Map Unit Composition

Ulysses: 100 percent

Component Descriptions

Ulysses
MLRA: 73 - Rolling Plains and Breaks
Landform: Ridge on upland
Parent material: Fine-silty calcareous loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 12.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe16-20)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 7 inches; silt loam
H2—7 to 25 inches; silt loam
H3—25 to 60 inches; silt loam

063UC—Ulysses silt loam, 3 to 6 percent slopes

Map Unit Composition

Ulysses: 100 percent

Component Descriptions

Ulysses
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 3 to 6 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 12.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe16-20)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 6 inches; silt loam
H2—6 to 16 inches; silty clay loam
H3—16 to 60 inches; silt loam

065PH—Penden loam, 3 to 8 percent slopes

Map Unit Composition

Penden: 100 percent

Component Descriptions

Penden
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-loamy residuum weathered from calcareous sandstone
Slope: 3 to 8 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 7 inches; loam
H2—7 to 27 inches; clay loam
H3—27 to 60 inches; clay loam

065PO—Penden-Uly complex, 7 to 20 percent slopes

Map Unit Composition

Penden: 65 percent
Uly: 35 percent

Component Descriptions

Penden
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-loamy residuum weathered from calcareous sandstone
Slope: 7 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 7 inches; loam
H2—7 to 27 inches; clay loam
H3—27 to 60 inches; clay loam

Uly
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-silty loess
Slope: 7 to 20 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)

Available water capacity: Very high (About 12.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 12 inches; silt loam
H2—12 to 28 inches; silt loam
H3—28 to 60 inches; silt loam

Minor Components
Unnamed Hydric Soils

065UD—Uly silt loam, 6 to 11 percent slopes

Map Unit Composition

Uly: 100 percent

Component Descriptions

Uly
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-silty loess
Slope: 6 to 11 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe20-26)
Land capability (irrigated): 4e
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 12 inches; silt loam
H2—12 to 28 inches; silt loam
H3—28 to 60 inches; silt loam

065WS—Wakeen-Nibson silt loams, 8 to 20 percent slopes

Map Unit Composition

Wakeen: 60 percent
Nibson: 40 percent

Component Descriptions

Wakeen
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous fine-silty residuum weathered from chalk
Slope: 6 to 20 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 7.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 12 inches; silt loam
H2—12 to 33 inches; silty clay loam
Cr—33 to 33 inches; unweathered bedrock

Nibson
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous loamy residuum weathered from limestone and shale
Slope: 6 to 20 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Somewhat excessively drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very low (About 3.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None

Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 6 inches; silt loam
H2—6 to 14 inches; silty clay loam
Cr—14 to 14 inches; unweathered bedrock

Minor Components
Unnamed Hydric Soils

135CC—Campus-Canlon complex, 2 to 40 percent slopes

Map Unit Composition

Campus: 65 percent
Canlon: 35 percent

Component Descriptions

Campus
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Old calcareous fine-loamy alluvium and/or calcareous fine-loamy residuum
Slope: 2 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 5.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 7 inches; loam
H2—7 to 15 inches; clay loam
H3—15 to 28 inches; clay loam
R—28 to 28 inches; unweathered bedrock

Canlon
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Calcareous loamy residuum weathered from sandstone
Slope: 2 to 40 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very low (About 2.8 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Shallow Limy (pe20-26)
Land capability (nonirrigated): 6s

Typical Profile:
H1—0 to 4 inches; loam
H2—4 to 14 inches; loam
R—14 to 14 inches; unweathered bedrock

135RS—Roxbury silt loam, frequently flooded

Map Unit Composition

Roxbury: 100 percent

Component Descriptions

Roxbury
MLRA: 73 - Rolling Plains and Breaks
Landform: Flood plain on river valley
Parent material: Calcareous fine-silty alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.4 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe20-26)
Land capability (irrigated): 2w
Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 21 inches; silt loam
H2—21 to 60 inches; silty clay loam

135UE—Uly-Coly silt loams, 1 to 3 percent slopes, eroded

Map Unit Composition

Uly: 60 percent
Coly: 40 percent

Component Descriptions

Uly
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 8 inches; silt loam
H2—8 to 55 inches; silty clay loam
H3—55 to 60 inches; silty clay loam

Coly
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.9 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Limy Upland (pe20-26)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 3 inches; silt loam
H2—3 to 60 inches; silt loam

AED—Arents, Earthen Dam

Ap—Armo loam, 1 to 3 percent slopes

Map Unit Composition

Armo: 100 percent

Component Descriptions

Armo
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous loamy colluvium derived from limestone
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 17 inches; loam
H2—17 to 30 inches; clay loam
H3—30 to 41 inches; clay loam
H4—41 to 51 inches; silt loam
H5—51 to 60 inches; very gravelly loam

Ar—Armo loam, 3 to 7 percent slopes

Map Unit Composition

Armo: 100 percent

Component Descriptions

Armo
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous loamy colluvium derived from limestone
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.9 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 19 inches; loam
H2—19 to 37 inches; loam
H3—37 to 60 inches; loam

As—Armo loam, 7 to 15 percent slopes

Map Unit Composition

Armo: 100 percent

Component Descriptions

Armo
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous loamy colluvium derived from limestone
Slope: 7 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.9 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 16 inches; loam
H2—16 to 38 inches; loam
H3—38 to 60 inches; loam

Minor Components
Unnamed Hydric Soils

Bd—Badland-Manvel complex, 3 to 20 percent slopes

Map Unit Composition

Badland: 70 percent
Manvel: 30 percent

Component Descriptions

Badland
MLRA: 73 - Rolling Plains and Breaks
Landform: Erosion remnant on badlands
Parent material: Calcareous residuum weathered from chalk
Slope: 3 to 20 percent
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium

Manvel
MLRA: 73 - Rolling Plains and Breaks
Landform: Fan on upland
Parent material: Calcareous fine-silty colluvium derived from chalk
Slope: 3 to 10 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.1 inches)

Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Chalk Flats (pe20-26)
Land capability (irrigated): 4e
Land capability (nonirrigated): 6

Typical Profile:
H1—0 to 3 inches; silt loam
H2—3 to 60 inches;

Bg—Bogue clay, 8 to 25 percent slopes

Map Unit Composition

Bogue: 100 percent

Component Descriptions

Bogue
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Residuum weathered from shale
Slope: 8 to 25 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Slowest permeability: Very slow (About 0.00 in/hr)
Available water capacity: Very low (About 2.9 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very high
Ecological site: Blue Shale (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 6 inches; clay
H2—6 to 19 inches; clay
H3—19 to 27 inches; clay
Cr—27 to 27 inches; unweathered bedrock

Br—Brownell gravelly loam, 2 to 10 percent slopes

Map Unit Composition

Brownell: 100 percent

Component Descriptions

Brownell
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous residuum weathered from limestone
Slope: 2 to 10 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 3.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 8 inches; gravelly loam
H2—8 to 28 inches; very channery loam
R—28 to 28 inches; unweathered bedrock

Cc—Campus-Canlon loams, 6 to 30 percent slopes

Map Unit Composition

Campus: 70 percent
Canlon: 30 percent

Component Descriptions

Campus
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Old calcareous fine-loamy alluvium and/or calcareous fine-loamy residuum

Slope: 6 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.4 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 7 inches; loam
H2—7 to 14 inches; loam
H3—14 to 36 inches; loam
R—36 to 36 inches; unweathered bedrock

Canlon
MLRA: 73 - Rolling Plains and Breaks
Landform: Escarpment on upland
Parent material: Calcareous loamy residuum weathered from sandstone
Slope: 6 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Low (About 3.5 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Shallow Limy (pe20-26)
Land capability (nonirrigated): 7s

Typical Profile:
H1—0 to 8 inches; loam
H2—8 to 18 inches; gravelly loam
R—18 to 18 inches; unweathered bedrock

Minor Components
Unnamed Hydric Soils

Cf—Carlson silt loam, 1 to 3 percent slopes

Map Unit Composition

Carlson: 100 percent

Component Descriptions

Carlson
MLRA: 73 - Rolling Plains and Breaks
Landform: Ridge on upland
Parent material: Loess over old loamy alluvium
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe20-26)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 4 inches; silt loam
H2—4 to 24 inches; silty clay loam
H3—24 to 60 inches; clay loam

Cu—Coly silt loam, 2 to 6 percent slopes

Map Unit Composition

Coly: 100 percent

Component Descriptions

Coly
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-silty calcareous loess
Slope: 2 to 6 percent
Drainage class: Well drained

Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.9 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Limy Upland (pe20-26)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 4 inches; silt loam
H2—4 to 60 inches; silt loam

Do—Dorrance sandy loam, 3 to 15 percent slopes

Map Unit Composition

Dorrance: 100 percent

Component Descriptions

Dorrance
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Mixed loamy alluvium
Slope: 3 to 15 percent
Drainage class: Excessively drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Low (About 4.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Sands (pe20-26)
Land capability (irrigated): 6s
Land capability (nonirrigated): 6s

Typical Profile:
H1—0 to 11 inches; sandy loam
H2—11 to 16 inches; gravelly sandy loam
H3—16 to 60 inches; gravelly sand

EF—Eltree silt loam, 1 to 3 percent slopes

Map Unit Composition

Eltree: 100 percent

Component Descriptions

Eltree
MLRA: -
Landform: Terrace on river valley
Parent material: Calcareous silty alluvium and/or calcareous silty colluvium
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.7 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Limy Upland (pe20-26)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 9 inches; silt loam
H2—9 to 25 inches; silt loam
H3—25 to 60 inches; silt loam

Ha—Harney silt loam, 0 to 1 percent slopes

Map Unit Composition

Harney: 100 percent

Component Descriptions

Harney
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 0 to 1 percent
Drainage class: Well drained

Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 10.8 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe20-26)
Land capability (irrigated): 1
Land capability (nonirrigated): 2c

Typical Profile:
H1—0 to 5 inches; silt loam
H2—5 to 33 inches; silty clay loam
H3—33 to 60 inches; silty clay loam

Minor Components
Ness

HB—Harney silt loam, 1 to 3 percent slopes

Map Unit Composition

Harney: 100 percent

Component Descriptions

Harney
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 11.4 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe20-26)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 10 inches; silt loam
H2—10 to 28 inches; silty clay loam
H3—28 to 60 inches; silt loam

He—Harney-Mento silt loams, 1 to 3 percent slopes

Map Unit Composition

Harney: 70 percent
Mento: 30 percent

Component Descriptions

Harney
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderately slow (About 0.20 in/hr)
Available water capacity: High (About 11.5 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe20-26)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 11 inches; silt loam
H2—11 to 27 inches; silty clay loam
H3—27 to 60 inches; silt loam

Mento
MLRA: 73 - Rolling Plains and Breaks
Landform: Divide on upland
Parent material: Loess over residuum weathered from limestone
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low

Ecological site: Clay Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 8 inches; silt loam
H2—8 to 22 inches; silty clay
H3—22 to 46 inches; silt loam
H4—46 to 60 inches; clay loam

Hg—Heizer-Brownell gravelly loams, 5 to 30 percent slopes

Map Unit Composition

Heizer: 60 percent
Brownell: 40 percent

Component Descriptions

Heizer
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous residuum weathered from limestone
Slope: 8 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very low (About 1.7 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Shallow Limy (pe20-26)
Land capability (nonirrigated): 7s

Typical Profile:
H1—0 to 6 inches; gravelly loam
H2—6 to 15 inches; very channery loam
R—15 to 15 inches; unweathered bedrock

Brownell
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous residuum weathered from limestone
Slope: 5 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very low (About 2.7 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 9 inches; gravelly loam
H2—9 to 24 inches; very channery loam
R—24 to 24 inches; unweathered bedrock

Hm—Holdrege silt loam, 1 to 3 percent slopes

Map Unit Composition

Holdrege: 100 percent

Component Descriptions

Holdrege
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Calcareous loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.0 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe20-26)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 11 inches; silt loam
H2—11 to 33 inches; silty clay loam
H3—33 to 48 inches; silt loam
H4—48 to 66 inches; silt loam

Ho—Hord silt loam, rarely flooded

Map Unit Composition

Hord: 100 percent

Component Descriptions

Hord
MLRA: 73 - Rolling Plains and Breaks
Landform: Terrace on river valley
Parent material: Fine-silty alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.1 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Terrace (pe20-26)
Land capability (irrigated): 1
Land capability (nonirrigated): 2c

Typical Profile:
H1—0 to 13 inches; silt loam
H2—13 to 36 inches; silty clay loam
H3—36 to 60 inches; silt loam

Hu—Humbarger loam, channeled

Map Unit Composition

Humbarger: 100 percent

Component Descriptions

Humbarger
MLRA: 73 - Rolling Plains and Breaks
Landform: Flood plain on river valley
Parent material: Calcareous loamy alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.8 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe20-26)
Land capability (nonirrigated): 5w

Typical Profile:
H1—0 to 28 inches; loam
H2—28 to 33 inches; loam
H3—33 to 60 inches; loam

Minor Components
Unnamed Hydric Soils

Hw—Humbarger loam, occasionally flooded

Map Unit Composition

Humbarger: 100 percent

Component Descriptions

Humbarger
MLRA: 73 - Rolling Plains and Breaks
Landform: Flood plain on river valley
Parent material: Calcareous fine-loamy alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.5 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe20-26)
Land capability (irrigated): 2w
Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 21 inches; loam
H2—21 to 31 inches; clay loam
H3—31 to 60 inches; loam

If—Inavale loamy sand, channeled

Map Unit Composition

Inavale: 100 percent

Component Descriptions

Inavale
MLRA: 73 - Rolling Plains and Breaks
Landform: Flood plain on river valley
Parent material: Sandy alluvium
Slope: 0 to 2 percent
Drainage class: Excessively drained
Slowest permeability: Rapid (About 5.95 in/hr)
Available water capacity: Low (About 4.9 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Frequent
Depth to seasonal water saturation: More than 6 feet
Runoff class: Negligible
Ecological site: Sandy Lowland (pe20-26)
Land capability (nonirrigated): 6w

Typical Profile:
H1—0 to 6 inches; loamy sand
H2—6 to 60 inches; sand

Mc—Mccook silt loam, occasionally flooded

Map Unit Composition

Mccook: 100 percent

Component Descriptions

Mccook
MLRA: 73 - Rolling Plains and Breaks
Landform: Stream terrace on river valley
Parent material: Weakly stratified calcareous coarse-silty alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.6 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Lowland (pe20-26)
Land capability (irrigated): 2w
Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 14 inches; silt loam
H2—14 to 60 inches; silt loam

MD—Mccook silt loam, rarely flooded

Map Unit Composition

Mccook: 100 percent

Component Descriptions

Mccook
MLRA: 73 - Rolling Plains and Breaks
Landform: Stream terrace on river valley
Parent material: Weakly stratified calcareous coarse-silty alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 11.6 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Terrace (pe20-26)
Land capability (irrigated): 1
Land capability (nonirrigated): 2c

Typical Profile:
H1—0 to 11 inches; silt loam
H2—11 to 60 inches; silt loam

Mu—Munjor sandy loam, occasionally flooded

Map Unit Composition

Munjor: 100 percent

Component Descriptions

Munjor
MLRA: 73 - Rolling Plains and Breaks
Landform: Flood plain on river valley
Parent material: Loamy alluvium
Slope: 0 to 2 percent
Drainage class: Well drained
Slowest permeability: Moderately rapid (About 2.00 in/hr)
Available water capacity: Moderate (About 8.5 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: More than 6 feet
Runoff class: Very low
Ecological site: Sandy Lowland (pe20-26)
Land capability (nonirrigated): 3w

Typical Profile:
H1—0 to 6 inches; sandy loam
H2—6 to 46 inches; fine sandy loam
H3—46 to 60 inches; fine sandy loam

Minor Components
Unnamed Hydric Soils

Pf—Penden clay loam, 3 to 7 percent slopes

Map Unit Composition

Penden: 100 percent

Component Descriptions

Penden
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-loamy residuum weathered from calcareous sandstone
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.3 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 10 inches; clay loam
H2—10 to 33 inches; loam
H3—33 to 60 inches; loam

Pk—Penden clay loam, 3 to 7 percent slopes, eroded

Map Unit Composition

Penden: 100 percent

Component Descriptions

Penden
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-loamy residuum weathered from calcareous sandstone
Slope: 3 to 7 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.2 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 5 inches; clay loam
H2—5 to 30 inches; loam
H3—30 to 60 inches; loam

Po—Penden loam, 7 to 15 percent slopes

Map Unit Composition

Penden: 100 percent

Component Descriptions

Penden
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-loamy residuum weathered from calcareous sandstone
Slope: 7 to 15 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 6e

Typical Profile:
H1—0 to 14 inches; loam
H2—14 to 32 inches; loam
H3—32 to 60 inches; loam

Rf—Roxbury silt loam, rarely flooded

Map Unit Composition

Roxbury: 100 percent

Component Descriptions

Roxbury
MLRA: 73 - Rolling Plains and Breaks
Landform: Stream terrace on river valley
Parent material: Calcareous fine-silty alluvium
Slope: 0 to 1 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.7 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: Rare
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Terrace (pe20-26)
Land capability (irrigated): 1
Land capability (nonirrigated): 2c

Typical Profile:
H1—0 to 29 inches; silt loam
H2—29 to 40 inches; silt loam
H3—40 to 60 inches; silt loam

Ub—Uly silt loam, 1 to 3 percent slopes

Map Unit Composition

Uly: 100 percent

Component Descriptions

Uly
MLRA: 73 - Rolling Plains and Breaks
Landform: Plain on tableland
Parent material: Loess
Slope: 1 to 3 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Very high (About 12.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Loamy Upland (pe20-26)
Land capability (irrigated): 2e
Land capability (nonirrigated): 2e

Typical Profile:
H1—0 to 8 inches; silt loam
H2—8 to 55 inches; silt loam
H3—55 to 60 inches; silt loam

Minor Components
Ness

Uc—Uly silt loam, 3 to 6 percent slopes

Map Unit Composition

Uly: 100 percent

Component Descriptions

Uly
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Fine-silty loess
Slope: 3 to 6 percent
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: High (About 12.0 inches)
Shrink-swell potential: Low (About 1.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Loamy Upland (pe20-26)
Land capability (irrigated): 3e
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 8 inches; silt loam
H2—8 to 22 inches; silt loam
H3—22 to 60 inches; silt loam

Vo—Voda silty clay loam, occasionally flooded

Map Unit Composition

Voda: 100 percent

Component Descriptions

Voda
MLRA: 73 - Rolling Plains and Breaks
Landform: Flood plain on river valley
Parent material: Clayey lacustrine deposits over loamy lacustrine deposits
Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Slowest permeability: Slow (About 0.06 in/hr)
Available water capacity: High (About 10.6 inches)
Shrink-swell potential: High (About 7.5 LEP)
Flooding hazard: Occasional
Depth to seasonal water saturation: About 6 to 36 inches
Runoff class: Medium
Ecological site: Clay Lowland (pe20-26)
Land capability (nonirrigated): 2w

Typical Profile:
H1—0 to 7 inches; silty clay loam
H2—7 to 24 inches; silty clay
H3—24 to 60 inches; silt loam

W—Water

Wb—Wakeen silt loam, 1 to 3 percent slopes

Map Unit Composition

Wakeen: 100 percent

Component Descriptions

Wakeen
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous fine-silty residuum weathered from limestone
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.5 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Low
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 3e

Typical Profile:
H1—0 to 10 inches; silt loam
H2—10 to 31 inches; silty clay loam
Cr—31 to 31 inches; unweathered bedrock

Wp—Wakeen-Nibson silt loams, 3 to 8 percent slopes

Map Unit Composition

Wakeen: 70 percent
Minor components: 30 percent

Component Descriptions

Wakeen
MLRA: 73 - Rolling Plains and Breaks
Landform: Hillslope on upland
Parent material: Calcareous fine-silty residuum weathered from chalk
Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: Moderate (About 0.60 in/hr)
Available water capacity: Moderate (About 6.7 inches)
Shrink-swell potential: Moderate (About 4.5 LEP)
Flooding hazard: None
Depth to seasonal water saturation: More than 6 feet
Runoff class: Medium
Ecological site: Limy Upland (pe20-26)
Land capability (nonirrigated): 4e

Typical Profile:
H1—0 to 4 inches; silt loam
H2—4 to 33 inches; silty clay loam
Cr—33 to 33 inches; unweathered bedrock

Minor Components
Nibson
Composition: About 30 percent
Slope: 3 to 8 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Somewhat excessively drained
Ecological site: Limy Upland (pe20-26)

PRIME FARMLAND
Trego County, Kansas

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation’s short− and long−range needs for food and fiber. Because the supply of high−quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built−up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in the following table. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in the "Acres and Proportionate Extent of Soils" table. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described in other tables in this document."

PRIME FARMLAND--Continued
Trego County, Kansas : Published

Map symbol	Mapunit name	Farmland Classification
051CC	Campus-carlson complex, 3 to 7 percent slopes	All areas are prime farmland
051EG	Eltree silt loam, 3 to 7 percent slopes	All areas are prime farmland
051HC	Harney silt loam, 3 to 7 percent slopes	All areas are prime farmland
065PH	Penden loam, 3 to 8 percent slopes	All areas are prime farmland
135UE	Uly-coly silt loams, 1 to 3 percent slopes, eroded	All areas are prime farmland
Ap	Armo loam, 1 to 3 percent slopes	All areas are prime farmland
Ar	Armo loam, 3 to 7 percent slopes	All areas are prime farmland
Cf	Carlson silt loam, 1 to 3 percent slopes	All areas are prime farmland
Cu	Coly silt loam, 2 to 6 percent slopes	All areas are prime farmland
EF	Eltree silt loam, 1 to 3 percent slopes	All areas are prime farmland
Ha	Harney silt loam, 0 to 1 percent slopes	All areas are prime farmland
He	Harney-mento silt loams, 1 to 3 percent slopes	All areas are prime farmland
Hm	Holdrege silt loam, 1 to 3 percent slopes	All areas are prime farmland
Ho	Hord silt loam, rarely flooded	All areas are prime farmland
Hw	Humbarger loam, occasionally flooded	All areas are prime farmland
Mc	Mccook silt loam, occasionally flooded	All areas are prime farmland
MD	Mccook silt loam, rarely flooded	All areas are prime farmland
Mu	Munjor sandy loam, occasionally flooded	All areas are prime farmland
Rf	Roxbury silt loam, rarely flooded	All areas are prime farmland
Ub	Uly silt loam, 1 to 3 percent slopes	All areas are prime farmland
Uc	Uly silt loam, 3 to 6 percent slopes	All areas are prime farmland
063BR	Bridgeport silt loam, occasionally flooded	Prime farmland if irrigated
063MC	Munjor-bridgeport complex, occasionally flooded	Prime farmland if irrigated
063UB	Ulysses silt loam, 1 to 3 percent slopes	Prime farmland if irrigated
063UC	Ulysses silt loam, 3 to 6 percent slopes	Prime farmland if irrigated
HB	Harney silt loam, 1 to 3 percent slopes	Prime farmland if irrigated

SOIL RATING FOR PLANT GROWTH, modified 1998
Trego County, Kansas

The "Soil Rating for Plant Growth, modified 1998" (SRPG) is a relative rating of the capacity of a soil to produce a specific plant under a defined management system. The index is determined from yield data on a few benchmark soils and is used to calculate yields, the net returns from crops, land assessment values, and taxes and to perform risk analysis when land management decisions are made. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Map symbol	Soil name	Crop Index
051AO	Armo Loam, 3 To 7 Percent Slopes, Eroded	54
051BG	Bogue Clay, 3 To 8 Percent Slopes	16
051CC	Campus-Carlson Complex, 3 To 7 Percent Slopes	34
051CD	Campus-Penden Complex, 5 To 15 Percent Slopes	23
051EG	Eltree Silt Loam, 3 To 7 Percent Slopes	54
051HC	Harney Silt Loam, 3 To 7 Percent Slopes	64
051HD	Harney Silty Clay Loam, 2 To 5 Percent Slopes, Eroded	64
051HE	Harney-Armo Complex, 3 To 7 Percent Slopes, Eroded	59
051HK	Harney-Wakeen Silt Loams, 1 To 3 Percent Slopes	49
051HL	Heizer-Armo Complex, 8 To 25 Percent Slopes	26
051MO	Mento Soils, 3 To 7 Percent Slopes, Eroded	54
051WH	Wakeen Silt Loam, 3 To 7 Percent Slopes	18
063BR	Bridgeport Silt Loam, Occasionally Flooded	54
063EB	Elkader Silt Loam, 1 To 3 Percent Slopes	31
063EC	Elkader Silt Loam, 3 To 6 Percent Slopes	30
063ED	Elkader And Manvel Silt Loams, 6 To 15 Percent Slopes	31
063KP	Kim-Penden Clay Loams, 6 To 15 Percent Slopes	34
063MA	Manvel Silt Loam, 1 To 3 Percent Slopes	39
063MB	Manvel-Badland Complex, 6 To 40 Percent Slopes	23
063MC	Munjor-Bridgeport Complex, Occasionally Flooded	44
063MD	Munjor-Inavale Complex, Occasionally Flooded	34
063OT	Otero Fine Sandy Loam, 1 To 4 Percent Slopes	32
063UB	Ulysses Silt Loam, 1 To 3 Percent Slopes	53
063UC	Ulysses Silt Loam, 3 To 6 Percent Slopes	47
065PH	Penden Loam, 3 To 8 Percent Slopes	31
065PO	Penden-Uly Complex, 7 To 20 Percent Slopes	36
065UD	Uly Silt Loam, 6 To 11 Percent Slopes	59
065WS	Wakeen-Nibson Silt Loams, 8 To 20 Percent Slopes	12
135CC	Campus-Canlon Complex, 2 To 40 Percent Slopes	16
135RS	Roxbury Silt Loam, Frequently Flooded	56
135UE	Uly-Coly Silt Loams, 1 To 3 Percent Slopes, Eroded	57
AED	Arents, Earthen Dam	0
Ap	Armo Loam, 1 To 3 Percent Slopes	57
Ar	Armo Loam, 3 To 7 Percent Slopes	53
As	Armo Loam, 7 To 15 Percent Slopes	47
Bd	Badland-Manvel Complex, 3 To 20 Percent Slopes	31
Bg	Bogue Clay, 8 To 25 Percent Slopes	14
Br	Brownell Gravelly Loam, 2 To 10 Percent Slopes	6
Cc	Campus-Canlon Loams, 6 To 30 Percent Slopes	16
Cf	Carlson Silt Loam, 1 To 3 Percent Slopes	62
Cu	Coly Silt Loam, 2 To 6 Percent Slopes	51
Do	Dorrance Sandy Loam, 3 To 15 Percent Slopes	20
EF	Eltree Silt Loam, 1 To 3 Percent Slopes	53
HB	Harney Silt Loam, 1 To 3 Percent Slopes	68
Ha	Harney Silt Loam, 0 To 1 Percent Slopes	66
He	Harney-Mento Silt Loams, 1 To 3 Percent Slopes	65
Hg	Heizer-Brownell Gravelly Loams, 5 To 30 Percent Slopes	5
Hm	Holdrege Silt Loam, 1 To 3 Percent Slopes	67
Ho	Hord Silt Loam, Rarely Flooded	72
Hu	Humbarger Loam, Channeled	41
Hw	Humbarger Loam, Occasionally Flooded	52
If	Inavale Loamy Sand, Channeled	22
MD	Mccook Silt Loam, Rarely Flooded	56
Mc	Mccook Silt Loam, Occasionally Flooded	54
Mu	Munjor Sandy Loam, Occasionally Flooded	43
Pf	Penden Clay Loam, 3 To 7 Percent Slopes	31
Pk	Penden Clay Loam, 3 To 7 Percent Slopes, Eroded	31
Po	Penden Loam, 7 To 15 Percent Slopes	29
Rf	Roxbury Silt Loam, Rarely Flooded	58
Ub	Uly Silt Loam, 1 To 3 Percent Slopes	64
Uc	Uly Silt Loam, 3 To 6 Percent Slopes	64
Vo	Voda Silty Clay Loam, Occasionally Flooded	34
W	Water	0
Wb	Wakeen Silt Loam, 1 To 3 Percent Slopes	21
Wp	Wakeen-Nibson Silt Loams, 3 To 8 Percent Slopes	15

Trego County, Kansas: Published
Field Office Thunderbook: Soils Properties for Conservation Planning

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "K", "Kf", "Wind Erodibility Group" and "Wind Erodibility Index" apply only to the surface layer)

Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro-logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
								K	Kf	T		
051AO:ARMO------	100	N/A	4e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86
051BG:BOGUE-----	100	N/A	6e	Not prime farmland	D	Blue Shale (pe20-26)	4	.28	.28	3	4	86
051CC:CAMPUS----	65	N/A	4e	All areas are prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	2	4L	86
051CC:CARLSON---	35	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
051CD:CAMPUS----	55	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	2	4L	86
051CD:PENDEN----	45	N/A	6e	Not prime farmland	B	Shallow Limy (pe20-26)	5	.28	.28	5	4L	86
051EG:ELTREE----	100	3e-	3e	All areas are prime farmland	B	Limy Upland (pe20-26)	7	.32	.32	5	6	48
051HC:HARNEY----	100	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
051HD:HARNEY----	100	N/A	4e	Not prime farmland	B	Loamy Upland (pe20-26)	8	.32	.32	5	7	38
051HE:HARNEY----	50	N/A	4e	Not prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
051HE:ARMO------	50	N/A	4e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86
051HK:HARNEY----	60	2e-	2e	Not prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
051HK:WAKEEN----	40	N/A	3e	Not prime farmland	B	Limy Upland (pe20-26)	5	.32	.32	3	4L	86
051HL:HEIZER----	50	N/A	7s	Not prime farmland	D	Shallow Limy (pe20-26)	9	.20	.55	1	8	0
051HL:ARMO------	50	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86
051MO:MENTO-----	100	N/A	4e	Not prime farmland	C	Clay Upland (pe20-26)	7	.37	.37	3	6	48
051WH:WAKEEN----	100	N/A	4e	Not prime farmland	B	Limy Upland (pe20-26)	5	.32	.32	3	4L	86
063BR:BRIDGEPORT	100	2w-	2w	Prime farmland if irrigated	B	Loamy Lowland (pe16-20)	5	.32	.32	5	4L	86
063EB:ELKADER---	100	2e-	2e	Not prime farmland	B	Limy Upland (pe16-20)	5	.32	.32	4	4L	86

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Field Office Thunderbook: Soils Properties for Conservation Planning--Continued

Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro-logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
								K	Kf	T		
063EC:ELKADER---	100	N/A	3e	Not prime farmland	B	Limy Upland (pe16-20)	5	.32	.32	4	4L	86
063ED:ELKADER---	55	N/A	6e	Not prime farmland	B	Limy Upland (pe16-20)	5	.32	.32	4	4L	86
063ED:MANVEL----	45	4e-	6e	Not prime farmland	B	Chalk Flats (pe16-20)	5	.37	.37	5	4L	86
063KP:KIM-------	60	4e-	6e	Not prime farmland	B	Limy Upland (pe16-20)	5	.28	.28	5	4L	86
063KP:PENDEN----	40	N/A	6e	Not prime farmland	B	Limy Upland (pe16-20)	5	.28	.28	5	4L	86
063MA:MANVEL----	100	N/A	4e	Not prime farmland	B	Chalk Flats (pe16-20)	5	.37	.37	5	4L	86
063MB:MANVEL----	65	4e-	6e	Not prime farmland	B	Chalk Flats (pe16-20)	5	.37	.37	5	4L	86
063MB:BADLAND---	35	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	---
063MC:MUNJOR----	60	N/A	3w	Prime farmland if irrigated	B	Sandy Lowland (pe16-20)	3	.24	.24	4	3	86
063MC:BRIDGEPORT	40	2w-	2w	Prime farmland if irrigated	B	Sandy Lowland (pe16-20)	3	.20	.20	5	3	86
063MD:MUNJOR----	55	N/A	3w	Not prime farmland	B	Sandy Lowland (pe16-20)	3	.24	.24	4	3	86
063MD:INAVALE---	45	3e-	4e	Not prime farmland	A	Sandy Lowland (pe16-20)	2	.17	.17	5	2	134
063OT:OTERO-----	100	3e-	4e	Not prime farmland	B	Sandy (pe16-20)	3	.24	.24	5	3	86
063UB:ULYSSES---	100	2e-	2e	Prime farmland if irrigated	B	Loamy Upland (pe16-20)	7	.32	.32	5	6	48
063UC:ULYSSES---	100	3e-	3e	Prime farmland if irrigated	B	Loamy Upland (pe16-20)	7	.32	.32	5	6	48
065PH:PENDEN----	100	N/A	3e	All areas are prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86
065PO:PENDEN----	65	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86
065PO:ULY-------	35	N/A	6e	Not prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
065UD:ULY-------	100	4e-	4e	Not prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
065WS:WAKEEN----	60	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	5	.32	.43	3	4L	86

Trego County, Kansas: Published
Field Office Thunderbook: Soils Properties for Conservation Planning--Continued

Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro-logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
								K	Kf	T		
065WS:NIBSON----	40	N/A	6e	Not prime farmland	D	Limy Upland (pe20-26)	5	.32	.32	2	4L	86
135CC:CAMPUS----	65	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.32	2	4L	86
135CC:CANLON----	35	N/A	6s	Not prime farmland	D	Shallow Limy (pe20-26)	5	.32	.32	1	4L	86
135RS:ROXBURY---	100	2w-	2w	Not prime farmland	B	Loamy Lowland (pe20-26)	5	.32	.32	5	4L	86
135UE:ULY-------	60	N/A	3e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
135UE:COLY------	40	3e-	3e	All areas are prime farmland	B	Limy Upland (pe20-26)	5	.43	.43	5	4L	86
AED:ARENTS, EARTHEN DAM----	100	N/A	8	Not prime farmland		Unspecified		---	---	-	---	---
Ap:ARMO---------	100	N/A	2e	All areas are prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86
Ar:ARMO---------	100	N/A	3e	All areas are prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86
As:ARMO---------	100	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86
Bd:BADLAND------	70	N/A	N/A	Not prime farmland		Unspecified		---	---	-	---	0
Bd:MANVEL-------	30	4e-	6	Not prime farmland	B	Chalk Flats (pe20-26)	5	.37	.37	5	4L	86
Bg:BOGUE--------	100	N/A	6e	Not prime farmland	D	Blue Shale (pe20-26)	4	.28	.28	3	4	86
Br:BROWNELL-----	100	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	9	.20	.49	2	8	0
Cc:CAMPUS-------	70	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	2	4L	86
Cc:CANLON-------	30	N/A	7s	Not prime farmland	D	Shallow Limy (pe20-26)	5	.32	.32	1	4L	86
Cf:CARLSON------	100	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Cu:COLY---------	100	3e-	3e	All areas are prime farmland	B	Limy Upland (pe20-26)	5	.43	.43	5	4L	86
Do:DORRANCE-----	100	6s-	6s	Not prime farmland	A	Sands (pe20-26)	3	.20	.20	3	3	86

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Field Office Thunderbook: Soils Properties for Conservation Planning--Continued

Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro-logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
								K	Kf	T		
EF:ELTREE-------	100	2e-	2e	All areas are prime farmland	B	Limy Upland (pe20-26)	5	.32	.32	5	4L	86
HB:HARNEY-------	100	2e-	2e	Prime farmland if irrigated	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Ha:HARNEY-------	100	1-	2c	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
He:HARNEY-------	70	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
He:MENTO--------	30	N/A	3e	All areas are prime farmland	C	Clay Upland (pe20-26)	7	.37	.37	3	6	48
Hg:HEIZER-------	60	N/A	7s	Not prime farmland	D	Shallow Limy (pe20-26)	9	.20	.55	1	8	0
Hg:BROWNELL-----	40	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	9	.20	.55	2	8	0
Hm:HOLDREGE-----	100	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Ho:HORD---------	100	1-	2c	All areas are prime farmland	B	Loamy Terrace (pe20-26)	7	.32	.32	5	6	48
Hu:HUMBARGER----	100	N/A	5w	Not prime farmland	B	Loamy Lowland (pe20-26)	5	.28	.28	5	4L	86
Hw:HUMBARGER----	100	2w-	2w	All areas are prime farmland	B	Loamy Lowland (pe20-26)	5	.28	.28	5	4L	86
If:INAVALE------	100	N/A	6w	Not prime farmland	A	Sandy Lowland (pe20-26)	2	.17	.17	5	2	134
MD:MCCOOK-------	100	1-	2c	All areas are prime farmland	B	Loamy Terrace (pe20-26)	5	.32	.32	5	4L	86
Mc:MCCOOK-------	100	2w-	2w	All areas are prime farmland	B	Loamy Lowland (pe20-26)	5	.32	.32	5	4L	86
Mu:MUNJOR-------	100	N/A	3w	All areas are prime farmland	B	Sandy Lowland (pe20-26)	3	.24	.24	4	3	86
Pf:PENDEN-------	100	N/A	3e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86
Pk:PENDEN-------	100	N/A	4e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86
Po:PENDEN-------	100	N/A	6e	Not prime farmland	B	Limy Upland (pe20-26)	5	.28	.28	5	4L	86

Trego County, Kansas: Published
Field Office Thunderbook: Soils Properties for Conservation Planning--Continued

Map symbol and soil name	Percent	Irr Cap Class	Nonirr Cap Class	Prime Farmland	Hydro-logic Group	Range site name	Windbreak suitability group	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
								K	Kf	T		
Rf:ROXBURY------	100	1-	2c	All areas are prime farmland	B	Loamy Terrace (pe20-26)	5	.32	.32	5	4L	86
Ub:ULY----------	100	2e-	2e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Uc:ULY----------	100	3e-	3e	All areas are prime farmland	B	Loamy Upland (pe20-26)	7	.32	.32	5	6	48
Vo:VODA---------	100	N/A	2w	Not prime farmland	C	Clay Lowland (pe20-26)	5	.32	.32	5	4L	86
W:WATER---------	100	N/A	N/A			Unspecified		---	---	-	---	---
Wb:WAKEEN-------	100	N/A	3e	Not prime farmland	B	Limy Upland (pe20-26)	5	.32	.32	3	4L	86
Wp:WAKEEN-------	70	N/A	4e	Not prime farmland	B	Limy Upland (pe20-26)	5	.32	.32	3	4L	86

RANGELAND PRODUCTIVITY
Trego County, Kansas

Use and Explanation of Rangeland, Grazed Forest Land, Native Pastureland Interpretations

Information in this subsection can be used to plan the use and management of soils for rangeland, grazed forest land, and native pasture. Different kinds of soils vary in their capacity to produce native grasses and other plants suitable for grazing. Information in this subsection provides groupings of similar soils and estimates of potential forage production, which can be used to determine livestock stocking rates.

Rangeland. Range is land on which the native vegetation (climax or natural potential plant community) is predominantly grasses, grasslike plants, forbs, and shrubs suitable for grazing and browsing. Range includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain shrub and forb communities. Rangeland receives no regular or frequent cultural treatment. The composition and production of the plant community are determined by soil, climate, topography, overstory canopy, and grazing management.

Grazed Forest Land. Includes land on which the understory includes, as an integral part of the forest plant community, plants that can be grazed without significantly impairing other forest values.

Native Pasture. Includes land on which the native vegetation (climax or natural potential plant community) is forest but which is used and managed primarily for production of native plants for forage. Native pasture includes cut-over forest land and forest land cleared and now managed for native or naturalized forage plants.

Rangeland

In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on rangeland are closely related to the kind of soil. Effective management based on the relationship between the soils and vegetation and water.

The Rangeland, Grazed Forest land, Native Pastureland Interpretations shows, for each soil that supports rangeland vegetation, the ecological site and the potential annual production of vegetation in favorable, normal, unfavorable years. An explanation of the column headings in this table follows.

An ecological site is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of a site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Total dry-weight production is the amount of vegetation that can be expected to grow annually on well managed rangeland that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year’s growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, average, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content.

Range management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity index and rangeland trend. Range similarity index is determined by comparing the present plant community with the potential natural plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in chapter 4 of the National Range and Pasture Handbook, which is available in local offices of the Natural Resources Conservation Service. The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

RANGELAND PRODUCTIVITY--Continued
Trego County, Kansas

(Only the soils that support rangeland vegetation suitable for grazing are rated.) Refer to range site description to determine the percentage allowable of grasses, forbs, and shrubs for the range ecological site.

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
051AO:				
Armo	Limy Upland (pe20-26)	4,000	3,000	1,000
051BG:				
Bogue	Blue Shale (pe20-26)	3,000	2,000	1,000
051CC:				
Campus	Limy Upland (pe20-26)	3,000	2,000	1,000
Carlson	Loamy Upland (pe20-26)	4,000	2,500	1,500
051CD:				
Campus	Limy Upland (pe20-26)	3,000	2,000	1,000
Penden	Shallow Limy (pe20-26)	4,000	2,500	1,000
051EG:				
Eltree	Limy Upland (pe20-26)	4,000	3,000	1,500
051HC:				
Harney	Loamy Upland (pe20-26)	5,000	3,500	2,000
051HD:				
Harney	Loamy Upland (pe20-26)	5,000	3,500	2,000
051HE:				
Armo	Limy Upland (pe20-26)	4,000	3,000	1,000
Harney	Loamy Upland (pe20-26)	5,000	3,500	2,000
051HK:				
Harney	Loamy Upland (pe20-26)	5,000	3,500	2,000
Wakeen	Limy Upland (pe20-26)	4,000	2,500	1,000
051HL:				
Armo	Limy Upland (pe20-26)	4,000	3,000	1,000
Heizer	Shallow Limy (pe20-26)	3,000	2,000	900
051MO:				
Mento	Clay Upland (pe20-26)	3,500	2,000	1,000
051WH:				
Wakeen	Limy Upland (pe20-26)	4,000	2,500	1,000
063BR:				
Bridgeport	Loamy Lowland (pe16-20)	4,000	3,000	2,000
063EB:				
Elkader	Limy Upland (pe16-20)	2,500	1,600	1,000
063EC:				
Elkader	Limy Upland (pe16-20)	2,500	1,600	1,000
063ED:				
Elkader	Limy Upland (pe16-20)	2,500	1,600	1,000
Manvel	Chalk Flats (pe16-20)	1,800	1,500	1,000
063KP:				
Kim	Limy Upland (pe16-20)	2,000	1,800	1,400
Penden	Limy Upland (pe16-20)	4,000	2,500	1,000
063MA:				
Manvel	Chalk Flats (pe16-20)	1,800	1,500	1,000
063MB:				
Manvel	Chalk Flats (pe16-20)	1,800	1,500	1,000
Badland	---	---	---	---
063MC:				
Munjor	Sandy Lowland (pe16-20)	5,000	4,000	3,000
Bridgeport	Sandy Lowland (pe16-20)	4,000	3,000	2,000
063MD:				
Munjor	Sandy Lowland (pe16-20)	5,000	4,000	3,000
Inavale	Sandy Lowland (pe16-20)	3,500	3,000	2,200
063OT:				
Otero	Sandy (pe16-20)	1,800	1,500	1,000
063UB:				
Ulysses	Loamy Upland (pe16-20)	2,400	1,800	1,000
063UC:				
Ulysses	Loamy Upland (pe16-20)	2,400	1,800	1,000
065PH:				
Penden	Limy Upland (pe20-26)	4,000	2,500	1,000
065PO:				
Penden	Limy Upland (pe20-26)	4,000	2,500	1,000
Uly	Loamy Upland (pe20-26)	3,700	3,200	2,700
065UD:				
Uly	Loamy Upland (pe20-26)	3,700	3,200	2,700
065WS:				
Wakeen	Limy Upland (pe20-26)	4,000	2,500	1,000
Nibson	Limy Upland (pe20-26)	4,000	2,500	1,500
135CC:				
Campus	Limy Upland (pe20-26)	3,000	2,000	1,000
Canlon	Shallow Limy (pe20-26)	2,400	1,600	900
135RS:				
Roxbury	Loamy Lowland (pe20-26)	5,000	4,000	2,500
135UE:				
Uly	Loamy Upland (pe20-26)	3,700	3,200	2,700
Coly	Limy Upland (pe20-26)	3,300	3,000	2,700
AED:				
Arents, Earthen Dam	---	---	---	---
Ap:				
Armo	Limy Upland (pe20-26)	4,000	3,000	1,000
Ar:				
Armo	Limy Upland (pe20-26)	4,000	3,000	1,000
As:				
Armo	Limy Upland (pe20-26)	4,000	3,000	1,000
Bd:				

RANGELAND PRODUCTIVITY--Continued
Trego County, Kansas

(Only the soils that support rangeland vegetation suitable for grazing are rated.) Refer to range site description to determine the percentage allowable of grasses, forbs, and shrubs for the range ecological site.

Map symbol and soil name	Ecological site	Total dry-weight production		
		Favorable year	Average year	Unfavorable year
		Lb/acre	Lb/acre	Lb/acre
Badland	---	---	---	---
Manvel	Chalk Flats (pe20-26)	1,800	1,500	1,000
Bg:				
Bogue	Blue Shale (pe20-26)	3,000	2,000	1,000
Br:				
Brownell	Limy Upland (pe20-26)	4,000	3,000	1,000
Cc:				
Campus	Limy Upland (pe20-26)	3,000	2,000	1,000
Canlon	Shallow Limy (pe20-26)	2,400	1,600	900
Cf:				
Carlson	Loamy Upland (pe20-26)	4,000	2,500	1,500
Cu:				
Coly	Limy Upland (pe20-26)	3,300	3,000	2,700
Do:				
Dorrance	Sands (pe20-26)	3,000	2,500	1,500
EF:				
Eltree	Limy Upland (pe20-26)	4,000	3,000	1,500
Ha:				
Harney	Loamy Upland (pe20-26)	4,000	2,200	1,000
HB:				
Harney	Loamy Upland (pe20-26)	4,000	2,200	1,000
He:				
Harney	Loamy Upland (pe20-26)	4,000	2,200	1,000
Mento	Clay Upland (pe20-26)	3,500	2,000	1,000
Hg:				
Heizer	Shallow Limy (pe20-26)	3,000	2,000	900
Brownell	Limy Upland (pe20-26)	4,000	3,000	1,000
Hm:				
Holdrege	Loamy Upland (pe20-26)	3,500	2,500	1,500
Ho:				
Hord	Loamy Terrace (pe20-26)	4,000	3,600	3,300
Hu:				
Humbarger	Loamy Lowland (pe20-26)	5,000	4,000	2,500
Hw:				
Humbarger	Loamy Lowland (pe20-26)	5,000	4,000	2,500
If:				
Inavale	Sandy Lowland (pe20-26)	3,300	2,800	2,200
Mc:				
Mccook	Loamy Lowland (pe20-26)	3,800	3,300	2,800
MD:				
Mccook	Loamy Terrace (pe20-26)	3,800	3,300	2,800
Mu:				
Munjor	Sandy Lowland (pe20-26)	5,000	4,000	3,000
Pf:				
Penden	Limy Upland (pe20-26)	4,000	2,500	1,000
Pk:				
Penden	Limy Upland (pe20-26)	4,000	2,500	1,000
Po:				
Penden	Limy Upland (pe20-26)	4,000	2,500	1,000
Rf:				
Roxbury	Loamy Terrace (pe20-26)	4,000	3,000	2,000
Ub:				
Uly	Loamy Upland (pe20-26)	3,700	3,200	2,700
Uc:				
Uly	Loamy Upland (pe20-26)	3,700	3,200	2,700
Vo:				
Voda	Clay Lowland (pe20-26)	5,500	4,000	3,000
W:				
Water	---	---	---	---
Wb:				
Wakeen	Limy Upland (pe20-26)	4,000	2,500	1,000
Wp:				
Wakeen	Limy Upland (pe20-26)	4,000	2,500	1,000

BUILDING SITE DEVELOPMENT
Trego County, Kansas

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. The following tables show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

BUILDING SITE DEVELOPMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
051AO:							
Armo	100	Not limited		Not limited		Somewhat limited	
						Slope	0.12
051BG:							
Bogue	100	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.29	Slope	0.48
051CC:							
Campus	65	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
						Slope	0.12
Carlson	35	Not limited		Not limited		Somewhat limited	
						Slope	0.12
051CD:							
Campus	55	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.16	Slope	0.16	Depth to hard bedrock	0.20
Penden	45	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.16	Slope	0.16	Shrink-swell	0.50
051EG:							
Eltree	100	Not limited		Not limited		Somewhat limited	
						Slope	0.12
051HC:							
Harney	100	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
						Slope	0.12
051HD:							
Harney	100	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
						Slope	0.00
051HE:							
Armo	50	Not limited		Not limited		Somewhat limited	
						Slope	0.12
Harney	50	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
						Slope	0.12
051HK:							
Harney	60	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Wakeen	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.06		
051HL:							
Armo	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
Heizer	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
051MO:							
Mento	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
051WH:							
Wakeen	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46	Slope	0.12
063BR:							
Bridgeport	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
063EB:							
Elkader	100	Not limited		Not limited		Not limited	
063EC:							
Elkader	100	Not limited		Not limited		Somewhat limited	
						Slope	0.12
063ED:							
Elkader	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Manvel	45	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.00	Slope	0.00	Shrink-swell	0.50

BUILDING SITE DEVELOPMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
063KP:							
Kim	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Penden	40	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
063MA:							
Manvel	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
063MB:							
Manvel	65	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.00	Slope	0.00	Shrink-swell	0.50
Badland	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
063MC:							
Munjor	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Bridgeport	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
063MD:							
Munjor	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Inavale	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
063OT:							
Otero	100	Not limited		Not limited		Not limited	
063UB:							
Ulysses	100	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
063UC:							
Ulysses	100	Not limited		Not limited		Somewhat limited	
						Slope	0.12
065PH:							
Penden	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.48
065PO:							
Penden	65	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
Uly	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
065UD:							
Uly	100	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
065WS:							
Wakeen	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.20		
Nibson	40	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
135CC:							
Campus	65	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
						Slope	0.48
Canlon	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
						Slope	0.48
135RS:							
Roxbury	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
135UE:							
Uly	60	Not limited		Not limited		Not limited	
Coly	40	Not limited		Not limited		Not limited	
AED:							
Arents, Earthen Dam	100	Not rated		Not rated		Not rated	

BUILDING SITE DEVELOPMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ap:							
Armo	100	Not limited		Not limited		Not limited	
Ar:							
Armo	100	Not limited		Not limited		Somewhat limited	
						Slope	0.12
As:							
Armo	100	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Bd:							
Badland	70	Not rated		Not rated		Not rated	
Manvel	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.86
						Shrink-swell	0.50
Bg:							
Bogue	100	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.71		
Br:							
Brownell	100	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
						Slope	0.48
Cc:							
Campus	70	Somewhat limited		Very limited		Very limited	
		Slope	0.37	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.06	Slope	0.37	Depth to hard bedrock	0.06
Canlon	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Cf:							
Carlson	100	Not limited		Not limited		Not limited	
Cu:							
Coly	100	Not limited		Not limited		Somewhat limited	
						Slope	0.00
Do:							
Dorrance	100	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
EF:							
Eltree	100	Not limited		Not limited		Not limited	
Ha:							
Harney	100	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
HB:							
Harney	100	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
He:							
Harney	70	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Mento	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Hg:							
Heizer	60	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Brownell	40	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.16	Slope	0.16	Depth to hard bedrock	0.90
Hm:							
Holdrege	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Ho:							
Hord	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Hu:							
Humbarger	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Hw:							
Humbarger	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00

BUILDING SITE DEVELOPMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
If:							
Inavale	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Mc:							
Mccook	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
MD:							
Mccook	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Mu:							
Munjor	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Pf:							
Penden	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
Pk:							
Penden	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
Po:							
Penden	100	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
Rf:							
Roxbury	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Shrink-swell	0.50		
Ub:							
Uly	100	Not limited		Not limited		Not limited	
Uc:							
Uly	100	Not limited		Not limited		Somewhat limited	
						Slope	0.12
Vo:							
Voda	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.86	Depth to saturated zone	1.00	Depth to saturated zone	0.86
W:							
Water	100	Not rated		Not rated		Not rated	
Wb:							
Wakeen	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.35		
Wp:							
Wakeen	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.20	Slope	0.48

BUILDING SITE DEVELOPMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
051AO:							
Armo	100	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
051BG:							
Bogue	100	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Too clayey	1.00	Too clayey	1.00
				Cutbanks cave	1.00	Depth to bedrock	0.29
				Depth to soft bedrock	0.29	Droughty	0.18
051CC:							
Campus	65	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to bedrock	0.20
				Cutbanks cave	0.10		
Carlson	35	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
051CD:							
Campus	55	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to bedrock	0.20
		Slope	0.16	Slope	0.16	Slope	0.16
				Cutbanks cave	0.10		
Penden	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Slope	0.16	Slope	0.16
		Slope	0.16	Cutbanks cave	0.10		
051EG:							
Eltree	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
051HC:							
Harney	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
051HD:							
Harney	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
051HE:							
Armo	50	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
Harney	50	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
051HK:							
Harney	60	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
Wakeen	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Depth to bedrock	0.06
				Depth to soft bedrock	0.06		
051HL:							
Armo	50	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Cutbanks cave	1.00	Slope	0.63
				Slope	0.63		
Heizer	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Frost action	0.50	Cutbanks cave	0.10	Slope	1.00
						Carbonate content	1.00
						Gravel content	0.71
051MO:							
Mento	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
051WH:							
Wakeen	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to soft bedrock	0.46	Depth to bedrock	0.46
				Cutbanks cave	0.10		
063BR:							
Bridgeport	100	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Cutbanks cave	0.10		
063EB:							
Elkader	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
063EC:							
Elkader	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		

BUILDING SITE DEVELOPMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
063ED:							
Elkader	55	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.37				
Manvel	45	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.00
		Shrink-swell	0.50	Slope	0.00		
		Slope	0.00				
063KP:							
Kim	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Cutbanks cave	0.10		
Penden	40	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
		Slope	0.37				
063MA:							
Manvel	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
063MB:							
Manvel	65	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.00
		Shrink-swell	0.50	Slope	0.00		
		Slope	0.00				
Badland	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10		
063MC:							
Munjor	60	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60		
Bridgeport	40	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Cutbanks cave	0.10		
063MD:							
Munjor	55	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60		
Inavale	45	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60	Droughty	0.13
063OT:							
Otero	100	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
063UB:							
Ulysses	100	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
		Frost action	0.50				
063UC:							
Ulysses	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
065PH:							
Penden	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
065PO:							
Penden	65	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Cutbanks cave	0.10		
Uly	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.96	Slope	0.96	Slope	0.96
		Frost action	0.50	Cutbanks cave	0.10		
065UD:							
Uly	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		

BUILDING SITE DEVELOPMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
065WS:							
Wakeen	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.84	Slope	0.84	Slope	0.84
		Shrink-swell	0.50	Depth to soft bedrock	0.20	Depth to bedrock	0.20
				Cutbanks cave	0.10		
Nibson	40	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	0.84	Slope	0.84	Slope	0.84
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.52
						Content of large stones	0.08
135CC:							
Campus	65	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to bedrock	0.65
		Frost action	0.50	Cutbanks cave	0.10		
Canlon	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.68
135RS:							
Roxbury	100	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
135UE:							
Uly	60	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Coly	40	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
AED:							
Arents, Earthen Dam	100	Not rated		Not rated		Not rated	
Ap:							
Armo	100	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
Ar:							
Armo	100	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
As:							
Armo	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Slope	0.37	Slope	0.37
				Cutbanks cave	0.10		
Bd:							
Badland	70	Not rated		Not rated		Not rated	
Manvel	30	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
Bg:							
Bogue	100	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Too clayey	1.00	Too clayey	1.00
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Depth to bedrock	0.71
				Depth to soft bedrock	0.71	Droughty	0.57
Br:							
Brownell	100	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Carbonate content	1.00
				Cutbanks cave	0.10	Gravel content	0.71
						Depth to bedrock	0.65
						Droughty	0.44
						Content of large stones	0.08

BUILDING SITE DEVELOPMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Cc:							
Campus	70	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.37	Depth to hard bedrock	1.00	Slope	0.37
		Depth to hard bedrock	0.06	Slope	0.37	Depth to bedrock	0.06
				Cutbanks cave	0.10		
Canlon	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	0.10
Cf:							
Carlson	100	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
Cu:							
Coly	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Do:							
Dorrance	100	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Droughty	0.29
				Slope	0.04	Slope	0.04
EF:							
Eltree	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Ha:							
Harney	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
HB:							
Harney	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
He:							
Harney	70	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
Mento	30	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
Hg:							
Heizer	60	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Frost action	0.50	Cutbanks cave	0.10	Slope	1.00
						Carbonate content	1.00
						Gravel content	0.71
Brownell	40	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Carbonate content	1.00
		Slope	0.16	Slope	0.16	Depth to bedrock	0.90
				Cutbanks cave	0.10	Droughty	0.75
						Gravel content	0.71
						Slope	0.16
Hm:							
Holdrege	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
Ho:							
Hord	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
		Flooding	0.40				
Hu:							
Humbarger	100	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.80	Flooding	1.00
		Frost action	0.50	Cutbanks cave	0.10		
Hw:							
Humbarger	100	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Cutbanks cave	0.10		
If:							
Inavale	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
				Flooding	0.80	Droughty	0.21
Mc:							
Mccook	100	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Cutbanks cave	0.10		
MD:							
Mccook	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
		Flooding	0.40				

BUILDING SITE DEVELOPMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Mu:							
Munjor	100	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
				Cutbanks cave	0.10		
Pf:							
Penden	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
Pk:							
Penden	100	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
Po:							
Penden	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Slope	0.37	Slope	0.37
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.37				
Rf:							
Roxbury	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
		Flooding	0.40				
Ub:							
Uly	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Uc:							
Uly	100	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
Vo:							
Voda	100	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Depth to saturated zone	0.48	Flooding	0.60	Depth to saturated zone	0.48
				Too clayey	0.50		
				Cutbanks cave	0.10		
W:							
Water	100	Not rated		Not rated		Not rated	
Wb:							
Wakeen	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to soft bedrock	0.35	Depth to bedrock	0.35
				Cutbanks cave	0.10		
Wp:							
Wakeen	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to soft bedrock	0.20	Depth to bedrock	0.20
				Cutbanks cave	0.10		

CONSTRUCTION MATERIALS
Trego County, Kansas

Construction Materials

The following tables give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated good, fair, or poor as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

The soils are rated as a probable or improbable source of sand and gravel. A rating of probable means that the source material is likely to be in or below the soil. The numerical ratings in these columns indicate the degree of probability. The number 0.00 indicates that the soil is an improbable source. A number between 0.00 and 1.00 indicates the degree to which the soil is a probable source of sand or gravel.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In these tables, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink–swell potential).

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
051AO:					
Armo	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051BG:					
Bogue	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051CC:					
Campus	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Carlson	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051CD:					
Campus	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Penden	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051EG:					
Eltree	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051HC:					
Harney	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051HD:					
Harney	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051HE:					
Armo	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Harney	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051HK:					
Harney	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Wakeen	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051HL:					
Armo	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Heizer	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051MO:					
Mento	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
051WH:					
Wakeen	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
063BR:					
Bridgeport	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
063EB:					
Elkader	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
063EC:					
Elkader	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
063ED:					
Elkader	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Manvel	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
063KP:					
Kim	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Penden	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
063MA:					
Manvel	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
063MB:					
Manvel	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
063MC:					
Munjor	60	Poor		Good	
		Bottom layer	0.00	Thickest layer	0.09
		Thickest layer	0.00		
Bridgeport	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.08
063MD:					
Munjor	55	Poor		Good	
		Bottom layer	0.00	Thickest layer	0.09
		Thickest layer	0.00		
Inavale	45	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.45
		Thickest layer	0.00	Thickest layer	0.45
063OT:					
Otero	100	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.08
		Thickest layer	0.00	Thickest layer	0.08
063UB:					
Ulysses	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
063UC:					
Ulysses	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
065PH:					
Penden	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
065PO:					
Penden	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Uly	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
065UD:					
Uly	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
065WS:					
Wakeen	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nibson	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
135CC:					
Campus	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Canlon	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
135RS:					
Roxbury	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
135UE:					
Uly	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Coly	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
AED:					
Arents, Earthen Dam	100	Not rated		Not rated	
Ap:					
Armo	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ar:					
Armo	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
As:					
Armo	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bd:					
Badland	70	Not rated		Not rated	
Manvel	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Bg:					
Bogue	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Br:					
Brownell	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cc:					
Campus	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Canlon	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cf:					
Carlson	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cu:					
Coly	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Do:					
Dorrance	100	Poor		Good	
		Bottom layer	0.00	Thickest layer	0.09
		Thickest layer	0.00	Bottom layer	0.99
EF:					
Eltree	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ha:					
Harney	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
HB:					
Harney	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
He:					
Harney	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mento	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Hg:					
Heizer	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Brownell	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Hm:					
Holdrege	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ho:					
Hord	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
Hu:					
Humbarger	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Hw:					
Humbarger	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
If:					
Inavale	100	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.49
		Thickest layer	0.00	Bottom layer	0.96
Mc:					
Mccook	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MD:					
Mccook	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mu:					
Munjor	100	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.07
		Thickest layer	0.00	Thickest layer	0.07
Pf:					
Penden	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Pk:					
Penden	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Po:					
Penden	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rf:					
Roxbury	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Ub:					
Uly	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Uc:					
Uly	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Vo:					
Voda	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
W:					
Water	100	Not rated		Not rated	
Wb:					
Wakeen	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Wp:					
Wakeen	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
051AO:							
Armo	100	Poor		Good		Fair	
		Low content of organic matter	0.00			Hard to reclaim	0.82
051BG:							
Bogue	100	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too Clayey	0.00
		Too acid	0.00			Depth to bedrock	0.71
		Droughty	0.04				
		Depth to bedrock	0.71				
051CC:							
Campus	65	Poor		Poor		Fair	
		Low content of organic matter	0.00	Depth to bedrock	0.00	Carbonate content	0.32
		Carbonate content	0.32			Depth to bedrock	0.79
		Depth to bedrock	0.79			Rock fragments	0.88
Carlson	35	Poor		Good		Good	
		Low content of organic matter	0.00				
		Water erosion	0.90				
051CD:							
Campus	55	Poor		Poor		Fair	
		Low content of organic matter	0.00	Depth to bedrock	0.00	Carbonate content	0.32
		Carbonate content	0.32			Depth to bedrock	0.79
		Depth to bedrock	0.79			Slope	0.84
						Rock fragments	0.88
Penden	45	Poor		Fair		Fair	
		Low content of organic matter	0.00	Shrink-swell	0.87	Slope	0.84
		Carbonate content	0.80			Too Clayey	0.94
		Too clayey	0.95				
		No water erosion limitation	0.99				
051EG:							
Eltree	100	Poor		Good		Good	
		Low content of organic matter	0.00				
		Water erosion	0.90				
051HC:							
Harney	100	Poor		Fair		Fair	
		Low content of organic matter	0.00	Shrink-swell	0.99	Too Clayey	0.02
		Too clayey	0.05				
		Water erosion	0.90				
051HD:							
Harney	100	Poor		Fair		Fair	
		Low content of organic matter	0.00	Shrink-swell	0.99	Too Clayey	0.02
		Too clayey	0.05				
		Water erosion	0.90				
051HE:							
Armo	50	Poor		Good		Fair	
		Low content of organic matter	0.00			Hard to reclaim	0.82
Harney	50	Poor		Fair		Fair	
		Low content of organic matter	0.00	Shrink-swell	0.99	Too Clayey	0.02
		Too clayey	0.05				
		Water erosion	0.90				
051HK:							
Harney	60	Poor		Fair		Fair	
		Low content of organic matter	0.00	Shrink-swell	0.99	Too Clayey	0.02
		Too clayey	0.05				
		Water erosion	0.90				

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Wakeen	40	Fair		Poor		Fair	
		Carbonate content	0.16	Depth to bedrock	0.00	Carbonate content	0.16
		Low content of organic matter	0.88	Shrink-swell	0.87	Depth to bedrock	0.93
		Water erosion	0.90				
		Depth to bedrock	0.93				
051HL:							
Armo	50	Good		Good		Fair	
						Slope	0.37
						Hard to reclaim	0.82
Heizer	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.00	Cobble content	0.85	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.92	Carbonate content	0.00
		Carbonate content	0.00			Slope	0.00
051MO:							
Mento	100	Poor		Fair		Good	
		Low content of organic matter	0.00	Shrink-swell	0.93		
		No water erosion limitation	0.99				
051WH:							
Wakeen	100	Fair		Poor		Fair	
		Carbonate content	0.16	Depth to bedrock	0.00	Carbonate content	0.16
		Depth to bedrock	0.54	Shrink-swell	0.90	Depth to bedrock	0.54
		Low content of organic matter	0.88				
		Water erosion	0.90				
063BR:							
Bridgeport	100	Poor		Good		Good	
		Low content of organic matter	0.00				
		Water erosion	0.90				
063EB:							
Elkader	100	Poor		Good		Poor	
		Low content of organic matter	0.00			Salinity	0.00
		Carbonate content	0.16			Carbonate content	0.16
		Water erosion	0.90				
		Salinity	0.97				
063EC:							
Elkader	100	Poor		Good		Poor	
		Low content of organic matter	0.00			Salinity	0.00
		Carbonate content	0.16			Carbonate content	0.16
		Water erosion	0.90				
		Salinity	0.97				
063ED:							
Elkader	55	Fair		Poor		Poor	
		Carbonate content	0.16	Low strength	0.00	Salinity	0.00
		Low content of organic matter	0.50			Carbonate content	0.16
		Water erosion	0.90			Slope	0.63
		Salinity	0.97				
Manvel	45	Poor		Poor		Good	
		Low content of organic matter	0.00	Low strength	0.00		
		Water erosion	0.90	Shrink-swell	0.87		
063KP:							
Kim	60	Fair		Good		Fair	
		Low content of organic matter	0.18			Slope	0.63
						Rock fragments	0.97
Penden	40	Poor		Poor		Fair	
		Low content of organic matter	0.00	Low strength	0.00	Slope	0.63
		Carbonate content	0.80	Shrink-swell	0.87	Carbonate content	0.80

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
063MA:							
Manvel	100	Fair		Fair		Good	
		Low content of organic matter	0.50	Shrink-swell	0.87		
		Water erosion	0.90				
063MB:							
Manvel	65	Fair		Poor		Good	
		Low content of organic matter	0.50	Low strength	0.00		
		Water erosion	0.90	Shrink-swell	0.87		
Badland	35	Poor		Poor		Poor	
		Low content of organic matter	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.08	Slope	0.00
063MC:							
Munjor	60	Poor		Good		Good	
		Low content of organic matter	0.00				
Bridgeport	40	Poor		Good		Good	
		Low content of organic matter	0.00				
		Water erosion	0.90				
063MD:							
Munjor	55	Poor		Good		Good	
		Low content of organic matter	0.00				
Inavale	45	Poor		Good		Poor	
		Wind erosion	0.00			Too sandy	0.00
		Too sandy	0.00				
		Low content of organic matter	0.50				
		Droughty	0.86				
063OT:							
Otero	100	Poor		Good		Fair	
		Low content of organic matter	0.00			Rock fragments	0.97
063UB:							
Ulysses	100	Fair		Poor		Good	
		Low content of organic matter	0.18	Low strength	0.00		
		Water erosion	0.90				
063UC:							
Ulysses	100	Fair		Good		Good	
		Low content of organic matter	0.18				
		Water erosion	0.90				
065PH:							
Penden	100	Poor		Fair		Fair	
		Low content of organic matter	0.00	Shrink-swell	0.87	Carbonate content	0.80
		Carbonate content	0.80				
065PO:							
Penden	65	Poor		Fair		Fair	
		Low content of organic matter	0.00	Shrink-swell	0.87	Slope	0.63
		Carbonate content	0.68			Carbonate content	0.68
Uly	35	Poor		Good		Fair	
		Low content of organic matter	0.00			Slope	0.04
		Water erosion	0.90				
065UD:							
Uly	100	Poor		Good		Fair	
		Low content of organic matter	0.00			Slope	0.96
		Water erosion	0.90				

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
065WS:							
Wakeen	60	Fair		Poor		Fair	
		Carbonate content	0.16	Depth to bedrock	0.00	Carbonate content	0.16
		Depth to bedrock	0.79	Shrink-swell	0.91	Slope	0.16
		Low content of organic matter	0.88			Depth to bedrock	0.79
		Water erosion	0.90				
Nibson	40	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Shrink-swell	0.87	Carbonate content	0.16
		Carbonate content	0.16			Slope	0.16
		Low content of organic matter	0.88			Rock fragments	0.88
		Water erosion	0.90				
135CC:							
Campus	65	Fair		Poor		Fair	
		Depth to bedrock	0.35	Depth to bedrock	0.00	Depth to bedrock	0.35
		Carbonate content	0.80			Carbonate content	0.80
		Low content of organic matter	0.82			Rock fragments	0.88
		Droughty	0.86				
Canlon	35	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00			Rock fragments	0.28
		Low content of organic matter	0.82				
135RS:							
Roxbury	100	Fair		Fair		Good	
		Water erosion	0.90	Shrink-swell	0.96		
135UE:							
Uly	60	Fair		Good		Good	
		Water erosion	0.90				
Coly	40	Fair		Good		Good	
		Low content of organic matter	0.18				
		Water erosion	0.90				
AED:							
Arents, Earthen Dam	100	Not rated		Not rated		Not rated	
Ap:							
Armo	100	Good		Good		Fair	
						Hard to reclaim	0.82
Ar:							
Armo	100	Poor		Good		Good	
		Low content of organic matter	0.00				
As:							
Armo	100	Poor		Good		Fair	
		Low content of organic matter	0.00			Slope	0.63
Bd:							
Badland	70	Not rated		Not rated		Not rated	
Manvel	30	Fair		Fair		Good	
		Low content of organic matter	0.50	Shrink-swell	0.87		
		Water erosion	0.90				
Bg:							
Bogue	100	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too Clayey	0.00
		Low content of organic matter	0.00	Shrink-swell	0.12	Slope	0.00
		Droughty	0.00	Slope	0.92	Depth to bedrock	0.29
		Depth to bedrock	0.29				
		Too acid	0.54				

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

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Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Br:							
Brownell	100	Poor		Poor		Poor	
		Low content of organic matter	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Carbonate content	0.00	Cobble content	0.69	Carbonate content	0.00
		Droughty	0.00			Depth to bedrock	0.35
		Depth to bedrock	0.35				
Cc:							
Campus	70	Poor		Poor		Fair	
		Low content of organic matter	0.00	Depth to bedrock	0.00	Carbonate content	0.32
		Carbonate content	0.32			Slope	0.63
		Depth to bedrock	0.93			Rock fragments	0.88
						Depth to bedrock	0.93
Canlon	30	Poor		Poor		Poor	
		Low content of organic matter	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.82	Slope	0.00
		Droughty	0.07			Rock fragments	0.28
		Carbonate content	0.97			Carbonate content	0.97
Cf:							
Carlson	100	Poor		Good		Poor	
		Low content of organic matter	0.00			Too Clayey	0.00
		Too clayey	0.00				
		Water erosion	0.90				
Cu:							
Coly	100	Fair		Good		Good	
		Low content of organic matter	0.18				
		Water erosion	0.90				
Do:							
Dorrance	100	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.00			Rock fragments	0.03
		Droughty	0.26			Slope	0.96
						Hard to reclaim	0.98
EF:							
Eltree	100	Poor		Good		Good	
		Low content of organic matter	0.00				
		Water erosion	0.90				
Ha:							
Harney	100	Fair		Good		Fair	
		Too clayey	0.05			Too Clayey	0.04
		Water erosion	0.90				
HB:							
Harney	100	Poor		Good		Fair	
		Low content of organic matter	0.00			Too Clayey	0.02
		Too clayey	0.05				
		Water erosion	0.90				
He:							
Harney	70	Poor		Good		Fair	
		Low content of organic matter	0.00			Too Clayey	0.02
		Too clayey	0.05				
		Water erosion	0.90				
Mento	30	Poor		Fair		Good	
		Low content of organic matter	0.00	Shrink-swell	0.72		
		No water erosion limitation	0.99				

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Hg:							
Heizer	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.68	Depth to bedrock	0.00
		Carbonate content	0.00	Cobble content	0.83	Carbonate content	0.00
		Low content of organic matter	0.82			Slope	0.00
Brownell	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Carbonate content	0.00	Cobble content	0.81	Carbonate content	0.00
		Depth to bedrock	0.10			Depth to bedrock	0.10
		Low content of organic matter	0.82			Slope	0.84
Hm:							
Holdrege	100	Fair		Fair		Fair	
		Water erosion	0.90	Shrink-swell	0.87	Too Clayey	0.84
		Too clayey	0.95				
Ho:							
Hord	100	Poor		Good		Good	
		Low content of organic matter	0.00				
		Water erosion	0.90				
Hu:							
Humbarger	100	Good		Good		Good	
Hw:							
Humbarger	100	Poor		Good		Good	
		Low content of organic matter	0.00				
If:							
Inavale	100	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00				
		Low content of organic matter	0.50				
		Droughty	0.80				
Mc:							
Mccook	100	Poor		Good		Good	
		Low content of organic matter	0.00				
		Water erosion	0.90				
MD:							
Mccook	100	Poor		Good		Good	
		Low content of organic matter	0.00				
		Water erosion	0.90				
Mu:							
Munjor	100	Poor		Good		Good	
		Low content of organic matter	0.00				
Pf:							
Penden	100	Poor		Fair		Fair	
		Low content of organic matter	0.00	Shrink-swell	0.87	Carbonate content	0.80
		Carbonate content	0.80				
Pk:							
Penden	100	Poor		Fair		Fair	
		Low content of organic matter	0.00	Shrink-swell	0.87	Carbonate content	0.80
		Carbonate content	0.80				
Po:							
Penden	100	Fair		Fair		Fair	
		Low content of organic matter	0.18	Shrink-swell	0.91	Slope	0.63
		Carbonate content	0.80			Carbonate content	0.80

CONSTRUCTION MATERIALS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Rf:							
Roxbury	100	Fair		Fair		Good	
		Water erosion	0.90	Shrink-swell	0.99		
Ub:							
Uly	100	Fair		Good		Good	
		Water erosion	0.90				
Uc:							
Uly	100	Poor		Good		Good	
		Low content of organic matter	0.00				
		Water erosion	0.90				
Vo:							
Voda	100	Poor		Fair		Poor	
		Too clayey	0.00	Depth to saturated zone	0.29	Too Clayey	0.00
		Low content of organic matter	0.00	Shrink-swell	0.99	Depth to saturated zone	0.29
W:							
Water	100	Not rated		Not rated		Not rated	
Wb:							
Wakeen	100	Fair		Poor		Fair	
		Carbonate content	0.16	Depth to bedrock	0.00	Carbonate content	0.16
		Depth to bedrock	0.65	Shrink-swell	0.87	Depth to bedrock	0.65
		Low content of organic matter	0.88				
		Water erosion	0.90				
Wp:							
Wakeen	70	Fair		Poor		Fair	
		Carbonate content	0.16	Depth to bedrock	0.00	Carbonate content	0.16
		Depth to bedrock	0.79	Shrink-swell	0.87	Depth to bedrock	0.79
		Low content of organic matter	0.88				
		Water erosion	0.90				

RECREATIONAL INTERPRETATIONS
Trego County, Kansas

Recreation

The soils of the survey area are rated in the following tables according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in this table can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas.

The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

RECREATIONAL INTERPRETATIONS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
051AO:							
Armo	100	Not limited		Not limited		Somewhat limited	
						Slope	0.87
051BG:							
Bogue	100	Somewhat limited		Somewhat limited		Very limited	
		Too clayey	0.50	Too clayey	0.50	Slope	1.00
		Restricted permeability	0.45	Restricted permeability	0.45	Too clayey	0.50
						Restricted permeability	0.45
						Depth to bedrock	0.29
051CC:							
Campus	65	Not limited		Not limited		Somewhat limited	
						Slope	0.87
						Depth to bedrock	0.20
Carlson	35	Not limited		Not limited		Somewhat limited	
						Slope	0.87
051CD:							
Campus	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
						Depth to bedrock	0.20
Penden	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
051EG:							
Eltree	100	Not limited		Not limited		Somewhat limited	
						Slope	0.87
051HC:							
Harney	100	Not limited		Not limited		Somewhat limited	
						Slope	0.87
051HD:							
Harney	100	Not limited		Not limited		Somewhat limited	
						Slope	0.50
051HE:							
Armo	50	Not limited		Not limited		Somewhat limited	
						Slope	0.87
Harney	50	Not limited		Not limited		Somewhat limited	
						Slope	0.87
051HK:							
Harney	60	Not limited		Not limited		Somewhat limited	
						Slope	0.00
Wakeen	40	Not limited		Not limited		Somewhat limited	
						Slope	0.00
051HL:							
Armo	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
Heizer	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Gravel content	0.71	Gravel content	0.71	Gravel content	1.00
						Content of large stones	0.08
051MO:							
Mento	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.39	Restricted permeability	0.39	Slope	0.87
						Restricted permeability	0.39
051WH:							
Wakeen	100	Not limited		Not limited		Somewhat limited	
						Slope	0.87
						Depth to bedrock	0.46
063BR:							
Bridgeport	100	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
063EB:							
Elkader	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.00
063EC:							
Elkader	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.87
						Dusty	0.50
063ED:							
Elkader	55	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Dusty	0.50
Manvel	45	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.00	Slope	0.00	Dusty	0.50
063KP:							
Kim	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00

RECREATIONAL INTERPRETATIONS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
						Gravel content	0.04
Penden	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
063MA:							
Manvel	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.00
063MB:							
Manvel	65	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.00	Slope	0.00	Dusty	0.50
Badland	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Restricted permeability	0.45	Restricted permeability	0.45	Restricted permeability	0.45
063MC:							
Munjor	60	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Bridgeport	40	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
063MD:							
Munjor	55	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Inavale	45	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.87	Too sandy	0.87
		Too sandy	0.87			Flooding	0.60
063OT:							
Otero	100	Not limited		Not limited		Somewhat limited	
						Gravel content	0.05
						Slope	0.00
063UB:							
Ulysses	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.00
063UC:							
Ulysses	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.87
						Dusty	0.50
065PH:							
Penden	100	Not limited		Not limited		Very limited	
						Slope	1.00
065PO:							
Penden	65	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Uly	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Slope	1.00
065UD:							
Uly	100	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
065WS:							
Wakeen	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
						Depth to bedrock	0.20
Nibson	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.84	Slope	0.84	Slope	1.00
						Gravel content	0.11
						Content of large stones	0.08
135CC:							
Campus	65	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.65
Canlon	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
						Gravel content	0.06
135RS:							
Roxbury	100	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
135UE:							
Uly	60	Not limited		Not limited		Somewhat limited	
						Slope	0.00
Coly	40	Not limited		Not limited		Somewhat limited	
						Slope	0.00
AED:							
Arents, Earthen Dam	100	Not rated		Not rated		Not rated	
Ap:							
Armo	100	Not limited		Not limited		Somewhat limited	

RECREATIONAL INTERPRETATIONS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
						Slope	0.00
Ar:							
Armo	100	Not limited		Not limited		Somewhat limited	
						Slope	0.87
As:							
Armo	100	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Bd:							
Badland	70	Not rated		Not rated		Not rated	
Manvel	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Dusty	0.50
Bg:							
Bogue	100	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50	Too clayey	0.50	Depth to bedrock	0.71
		Restricted permeability	0.45	Restricted permeability	0.45	Too clayey	0.50
						Restricted permeability	0.45
Br:							
Brownell	100	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.71	Gravel content	0.71	Gravel content	1.00
						Slope	1.00
						Depth to bedrock	0.65
						Content of large stones	0.08
Cc:							
Campus	70	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Depth to bedrock	0.06
Canlon	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.06
Cf:							
Carlson	100	Not limited		Not limited		Somewhat limited	
						Slope	0.00
Cu:							
Coly	100	Not limited		Not limited		Somewhat limited	
						Slope	0.50
Do:							
Dorrance	100	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
EF:							
Eltree	100	Not limited		Not limited		Somewhat limited	
						Slope	0.00
Ha:							
Harney	100	Not limited		Not limited		Not limited	
HB:							
Harney	100	Not limited		Not limited		Somewhat limited	
						Slope	0.00
He:							
Harney	70	Not limited		Not limited		Somewhat limited	
						Slope	0.00
Mento	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.39	Restricted permeability	0.39	Restricted permeability	0.39
						Slope	0.00
Hg:							
Heizer	60	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Gravel content	0.71	Gravel content	0.71	Gravel content	1.00
						Content of large stones	0.08
Brownell	40	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.71	Gravel content	0.71	Gravel content	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
						Depth to bedrock	0.90
						Content of large stones	0.08
Hm:							
Holdrege	100	Not limited		Not limited		Somewhat limited	
						Slope	0.00
Ho:							
Hord	100	Very limited		Not limited		Not limited	
		Flooding	1.00				
Hu:							
Humbarger	100	Very limited		Somewhat limited		Very limited	

RECREATIONAL INTERPRETATIONS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
		Flooding	1.00	Flooding	0.40	Flooding	1.00
Hw:							
Humbarger	100	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
If:							
Inavale	100	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Too sandy	0.87	Flooding	1.00
		Too sandy	0.87	Flooding	0.40	Too sandy	0.87
Mc:							
Mccook	100	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
MD:							
Mccook	100	Very limited		Not limited		Not limited	
		Flooding	1.00				
Mu:							
Munjor	100	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
Pf:							
Penden	100	Not limited		Not limited		Somewhat limited	
						Slope	0.87
Pk:							
Penden	100	Not limited		Not limited		Somewhat limited	
						Slope	0.87
Po:							
Penden	100	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Rf:							
Roxbury	100	Very limited		Not limited		Not limited	
		Flooding	1.00				
Ub:							
Uly	100	Not limited		Not limited		Somewhat limited	
						Slope	0.00
Uc:							
Uly	100	Not limited		Not limited		Somewhat limited	
						Slope	0.87
Vo:							
Voda	100	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Restricted permeability	0.94	Restricted permeability	0.94
		Restricted permeability	0.94	Depth to saturated zone	0.48	Depth to saturated zone	0.86
		Depth to saturated zone	0.86			Flooding	0.60
W:							
Water	100	Not rated		Not rated		Not rated	
Wb:							
Wakeen	100	Not limited		Not limited		Somewhat limited	
						Slope	0.00
Wp:							
Wakeen	70	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.20

RECREATIONAL INTERPRETATIONS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Paths and trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value
051AO:					
Armo	100	Not limited		Not limited	
051BG:					
Bogue	100	Somewhat limited		Very limited	
		Too clayey	0.50	Too clayey	1.00
				Depth to bedrock	0.29
				Droughty	0.18
051CC:					
Campus	65	Not limited		Somewhat limited	
				Depth to bedrock	0.20
Carlson	35	Not limited		Not limited	
051CD:					
Campus	55	Not limited		Somewhat limited	
				Depth to bedrock	0.20
				Slope	0.16
Penden	45	Not limited		Somewhat limited	
				Slope	0.16
051EG:					
Eltree	100	Not limited		Not limited	
051HC:					
Harney	100	Not limited		Not limited	
051HD:					
Harney	100	Not limited		Not limited	
051HE:					
Armo	50	Not limited		Not limited	
Harney	50	Not limited		Not limited	
051HK:					
Harney	60	Not limited		Not limited	
Wakeen	40	Not limited		Somewhat limited	
				Depth to bedrock	0.06
051HL:					
Armo	50	Not limited		Somewhat limited	
				Slope	0.63
Heizer	50	Somewhat limited		Very limited	
		Slope	0.08	Depth to bedrock	1.00
				Droughty	1.00
				Slope	1.00
				Carbonate content	1.00
				Gravel content	0.71
051MO:					
Mento	100	Not limited		Not limited	
051WH:					
Wakeen	100	Not limited		Somewhat limited	
				Depth to bedrock	0.46
063BR:					
Bridgeport	100	Not limited		Somewhat limited	
				Flooding	0.60
063EB:					
Elkader	100	Somewhat limited		Not limited	
		Dusty	0.50		
063EC:					
Elkader	100	Somewhat limited		Not limited	
		Dusty	0.50		
063ED:					
Elkader	55	Somewhat limited		Somewhat limited	
		Dusty	0.50	Slope	0.37
Manvel	45	Somewhat limited		Somewhat limited	
		Dusty	0.50	Slope	0.00
063KP:					
Kim	60	Not limited		Somewhat limited	
				Slope	0.37
Penden	40	Not limited		Somewhat limited	
				Slope	0.37
063MA:					
Manvel	100	Somewhat limited		Not limited	
		Dusty	0.50		
063MB:					
Manvel	65	Somewhat limited		Somewhat limited	
		Dusty	0.50	Slope	0.00
Badland	35	Very limited		Very limited	
		Water erosion	1.00	Depth to bedrock	1.00
		Slope	0.92	Slope	1.00
063MC:					
Munjor	60	Not limited		Somewhat limited	
				Flooding	0.60
Bridgeport	40	Not limited		Somewhat limited	
				Flooding	0.60
063MD:					
Munjor	55	Not limited		Somewhat limited	
				Flooding	0.60
Inavale	45	Somewhat limited		Somewhat limited	

RECREATIONAL INTERPRETATIONS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Paths and trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value
		Too sandy	0.87	Flooding	0.60
				Droughty	0.13
063OT:					
Otero	100	Not limited		Not limited	
063UB:					
Ulysses	100	Somewhat limited		Not limited	
		Dusty	0.50		
063UC:					
Ulysses	100	Somewhat limited		Not limited	
		Dusty	0.50		
065PH:					
Penden	100	Not limited		Not limited	
065PO:					
Penden	65	Not limited		Somewhat limited	
				Slope	0.37
Uly	35	Not limited		Somewhat limited	
				Slope	0.96
065UD:					
Uly	100	Not limited		Somewhat limited	
				Slope	0.04
065WS:					
Wakeen	60	Not limited		Somewhat limited	
				Slope	0.84
				Depth to bedrock	0.20
Nibson	40	Not limited		Very limited	
				Depth to bedrock	1.00
				Slope	0.84
				Droughty	0.52
				Content of large stones	0.08
135CC:					
Campus	65	Not limited		Somewhat limited	
				Depth to bedrock	0.65
Canlon	35	Not limited		Very limited	
				Depth to bedrock	1.00
				Droughty	0.68
135RS:					
Roxbury	100	Not limited		Somewhat limited	
				Flooding	0.60
135UE:					
Uly	60	Not limited		Not limited	
Coly	40	Not limited		Not limited	
AED:					
Arents, Earthen Dam	100	Not rated		Not rated	
Ap:					
Armo	100	Not limited		Not limited	
Ar:					
Armo	100	Not limited		Not limited	
As:					
Armo	100	Not limited		Somewhat limited	
				Slope	0.37
Bd:					
Badland	70	Not rated		Not rated	
Manvel	30	Somewhat limited		Not limited	
		Dusty	0.50		
Bg:					
Bogue	100	Somewhat limited		Very limited	
		Too clayey	0.50	Too clayey	1.00
		Slope	0.08	Slope	1.00
				Depth to bedrock	0.71
				Droughty	0.57
Br:					
Brownell	100	Not limited		Very limited	
				Carbonate content	1.00
				Gravel content	0.71
				Depth to bedrock	0.65
				Droughty	0.44
				Content of large stones	0.08
Cc:					
Campus	70	Not limited		Somewhat limited	
				Slope	0.37
				Depth to bedrock	0.06
Canlon	30	Somewhat limited		Very limited	
		Slope	0.18	Depth to bedrock	1.00
				Slope	1.00
				Droughty	0.10

RECREATIONAL INTERPRETATIONS--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Paths and trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Cf:					
Carlson	100	Not limited		Not limited	
Cu:					
Coly	100	Not limited		Not limited	
Do:					
Dorrance	100	Not limited		Somewhat limited	
				Droughty	0.29
				Slope	0.04
EF:					
Eltree	100	Not limited		Not limited	
Ha:					
Harney	100	Not limited		Not limited	
HB:					
Harney	100	Not limited		Not limited	
He:					
Harney	70	Not limited		Not limited	
Mento	30	Not limited		Not limited	
Hg:					
Heizer	60	Somewhat limited		Very limited	
		Slope	0.32	Depth to bedrock	1.00
				Droughty	1.00
				Slope	1.00
				Carbonate content	1.00
				Gravel content	0.71
Brownell	40	Not limited		Very limited	
				Carbonate content	1.00
				Depth to bedrock	0.90
				Droughty	0.75
				Gravel content	0.71
				Slope	0.16
Hm:					
Holdrege	100	Not limited		Not limited	
Ho:					
Hord	100	Not limited		Not limited	
Hu:					
Humbarger	100	Somewhat limited		Very limited	
		Flooding	0.40	Flooding	1.00
Hw:					
Humbarger	100	Not limited		Somewhat limited	
				Flooding	0.60
If:					
Inavale	100	Somewhat limited		Very limited	
		Too sandy	0.87	Flooding	1.00
		Flooding	0.40	Droughty	0.21
Mc:					
Mccook	100	Not limited		Somewhat limited	
				Flooding	0.60
MD:					
Mccook	100	Not limited		Not limited	
Mu:					
Munjor	100	Not limited		Somewhat limited	
				Flooding	0.60
Pf:					
Penden	100	Not limited		Not limited	
Pk:					
Penden	100	Not limited		Not limited	
Po:					
Penden	100	Not limited		Somewhat limited	
				Slope	0.37
Rf:					
Roxbury	100	Not limited		Not limited	
Ub:					
Uly	100	Not limited		Not limited	
Uc:					
Uly	100	Not limited		Not limited	
Vo:					
Voda	100	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.11	Flooding	0.60
				Depth to saturated zone	0.48
W:					
Water	100	Not rated		Not rated	
Wb:					
Wakeen	100	Not limited		Somewhat limited	
				Depth to bedrock	0.35
Wp:					
Wakeen	70	Not limited		Somewhat limited	
				Depth to bedrock	0.20

WILDLIFE INTERPRETATIONS
Trego County, Kansas

Use and Explanation of Wildlife Interpretations

Soils directly affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the development of water impoundments. The kind and abundance of wildlife that populate an area depend largely on the amount and distribution of food, cover, water, and living space. If any one of these elements is missing, inadequate, or inaccessible, wildlife will be scarce or will not inhabit the area. If the soils have the potential, wildlife habitat can be created or improved by planting appropriate vegetation, properly managing the existing plant cover, and fostering the natural establishment of desirable plants.

In the Wildlife Interpretations table, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

Suitability Ratings

The potential of the soil is rated good, fair, poor, or very poor.

Good − means that the element of wildlife habitat or the kind of habitat is easily created, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected if the soil is used for the designated purpose.

Fair − means that the element of wildlife habitat or kind of habitat can be created, improved, or maintained in most places. Moderately intensive management is required for satisfactory results.

Poor − means that limitations are severe for the designated element or kind of wildlife habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and requires intensive effort.

Very Poor − means that limitations are very severe for the designated element or kind of wildlife habitat. Habitat is difficult to create, improve, or maintain in most places, and management is difficult and requires intensive effort.

Description of Wildlife Habitat Elements

Openland habitat consists of croplands, pastures, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The kind of wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, killdeer, cottontail rabbit, red fox, and coyote.

Woodland habitat consists of hardwood or conifers, or a mixture of these and associated grasses, legumes and wild herbaceous plants. Examples of wildlife attracted to this habitat are wild turkey, thrushes, woodpeckers, owl, tree squirrels, raccoon, and deer.

Wetland habitat consists of water−tolerant plants in open, marshy or swampy, shallow water areas. Examples of wildlife attracted to this habitat are ducks, geese, herons, bitterns, rails, kingfishers, shorebirds, muskrat, mink, and beaver.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed−producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit−producing shrubs that are suitable for planting on soils rated good are Russian−olive, autumn−olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Shrubs are bushy woody plants that produce fruit, buds, twigs, bark, and foliage. Soil properties and features that affect the growth of shrubs are depth of the root zone, available water capacity, salinity, and soil moisture. Examples of shrubs are fragrant sumac, chokecherry, American plum, sand plum, and gorden currant.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, saltgrass, cordgrass, rushes, sedges, and cattails.

WILDLIFE INTERPRETATIONS--Continued
Trego County, Kansas

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, red fox and coyote.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Habitat for rangeland wildlife consists of areas of shrubs and wild herbaceous plants. Wildlife attracted to rangeland include antelope, deer, cottontail rabbit, prairie chicken, meadowlark, quail, and pheasant.

WILDLIFE INTERPRETATIONS
Trego County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life	Range-land wild-life
051AO:												
ARMO----------	Fair	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
051BG:												
BOGUE----------	Poor	Fair	Poor	Poor	Poor	Poor	Very poor	Poor	Poor	Poor	Very poor	Poor
051CC:												
CAMPUS----------	Fair	Good	Good	---	---	Poor	Very poor	Very poor	Fair	---	Very poor	Fair
CARLSON----------	Fair	Good	Fair	---	---	Poor	Poor	Poor	Fair	---	Poor	Poor
051CD:												
CAMPUS----------	Poor	Fair	Good	---	---	Poor	Very poor	Very poor	Fair	---	Very poor	Fair
PENDEN----------	Poor	Fair	Fair	---	---	Poor	Very poor	Poor	Fair	---	Very poor	Fair
051EG:												
ELTREE----------	Fair	Good	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
051HC:												
HARNEY----------	Fair	Good	Fair	Poor	Poor	Fair	Poor	Poor	Fair	---	Poor	Fair
051HD:												
HARNEY----------	Fair	Good	Fair	Poor	Poor	Fair	Poor	Poor	Fair	---	Poor	Fair
051HE:												
ARMO----------	Fair	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
HARNEY----------	Fair	Good	Fair	Poor	Poor	Fair	Poor	Poor	Fair	---	Poor	Fair
051HK:												
HARNEY----------	Good	Good	Good	Poor	Poor	Good	Poor	Fair	Good	---	Poor	Good
WAKEEN----------	Fair	Good	Fair	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
051HL:												
ARMO----------	Poor	Fair	Good	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
HEIZER----------	Very poor	Poor	Poor	---	---	Poor	Very poor	Very poor	Poor	---	Very poor	Poor
051MO:												
MENTO----------	Fair	Good	Fair	---	---	Fair	Poor	Poor	Fair	---	Poor	Fair
051WH:												
WAKEEN----------	Fair	Good	Fair	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
063BR:												
BRIDGEPORT------	Fair	Good	Fair	---	---	Poor	Poor	Poor	Fair	---	Poor	Poor
063EB:												
ELKADER----------	Good	Good	Fair	---	---	Poor	Poor	Poor	Fair	---	Poor	Poor
063EC:												
ELKADER----------	Fair	Good	Fair	---	---	Poor	Poor	Poor	Fair	---	Poor	Poor
063ED:												
ELKADER----------	Poor	Fair	Fair	---	---	Poor	Very poor	Very poor	Fair	---	Very poor	Poor
MANVEL----------	Poor	Fair	Fair	Poor	Very poor	---	Very poor	Very poor	Poor	---	Very poor	Fair
063KP:												
KIM----------	Poor	Poor	Fair	---	---	Fair	Very poor	Very poor	Poor	---	Very poor	Fair
PENDEN----------	Poor	Fair	Fair	---	---	Poor	Very poor	Poor	Fair	---	Very poor	Fair
063MA:												
MANVEL----------	Poor	Fair	Fair	Poor	Very poor	---	Very poor	Very poor	Poor	---	Very poor	Fair

WILDLIFE INTERPRETATIONS--Continued
Trego County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Shrubs	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife	Rangeland wildlife
063MB:												
MANVEL	Poor	Fair	Fair	Poor	Very poor	---	Very poor	Very poor	Poor	---	Very poor	Fair
BADLAND	---	---	---	---	---	---	---	---	---	---	---	---
063MC:												
MUNJOR	Fair	Fair	Good	Fair	Fair	Good	Poor	Poor	Fair	Fair	Poor	Good
BRIDGEPORT	Fair	Good	Fair	---	---	Poor	Poor	Poor	Fair	---	Poor	Poor
063MD:												
MUNJOR	Fair	Fair	Good	Fair	Fair	Good	Poor	Poor	Fair	Fair	Poor	Good
INAVALE	Fair	Fair	Good	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor	Good
063OT:												
OTERO	Poor	Fair	Fair	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
063UB:												
ULYSSES	Good	Good	Fair	---	---	Poor	Poor	Fair	Fair	---	Poor	Fair
063UC:												
ULYSSES	Fair	Good	Fair	---	---	Poor	Poor	Poor	Fair	---	Poor	Fair
065PH:												
PENDEN	Fair	Good	Fair	---	---	Poor	Very poor	Poor	Fair	---	Very poor	Fair
065PO:												
PENDEN	Poor	Fair	Fair	---	---	Poor	Very poor	Poor	Fair	---	Very poor	Fair
ULY	Poor	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Poor	Good	Very poor	Fair
065UD:												
ULY	Fair	Good	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Good	Very poor	Good
065WS:												
WAKEEN	Poor	Fair	Fair	---	---	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
NIBSON	Poor	Poor	Fair	Very poor	Very poor	Fair	Very poor	Very poor	Fair	---	Very poor	Fair
135CC:												
CAMPUS	Poor	Fair	Good	---	---	Poor	Very poor	Very poor	Fair	---	Very poor	Fair
CANLON	Poor	Poor	Poor	---	---	Poor	Very poor	Very poor	Poor	---	Very poor	Poor
135RS:												
ROXBURY	Fair	Fair	Fair	Fair	Fair	Fair	Poor	Fair	Fair	Fair	Poor	Fair
135UE:												
ULY	Good	Good	Good	Good	Fair	Fair	Very poor	Very poor	Good	Good	Very poor	Good
COLY	Fair	Good	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Good	Very poor	Fair
AED:												
ARENTS, EARTHEN DAM	---	---	---	---	---	---	---	---	---	---	---	---
Ap:												
ARMO	Good	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Ar:												
ARMO	Fair	Good	Good	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
As:												
ARMO	Poor	Fair	Good	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
Bd:												
BADLAND	---	---	---	---	---	---	---	---	---	---	---	---

WILDLIFE INTERPRETATIONS--Continued
Trego County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life	Range-land wild-life
MANVEL----------	Poor	Fair	Fair	Poor	Very poor	---	Very poor	Very poor	Poor	---	Very poor	Fair
Bg: BOGUE----------	Poor	Fair	Poor	Poor	Poor	Poor	Very poor	Poor	Poor	Poor	Very poor	Poor
Br: BROWNELL--------	Poor	Fair	Fair	---	---	Poor	Very poor	Very poor	Fair	---	Very poor	Poor
Cc: CAMPUS----------	Poor	Fair	Good	---	---	Poor	Very poor	Very poor	Fair	---	Very poor	Fair
CANLON----------	Very poor	Poor	Poor	---	---	Poor	Very poor	Very poor	Poor	---	Very poor	Poor
Cf: CARLSON---------	Good	Good	Fair	---	---	Fair	Poor	Fair	Fair	---	Poor	Fair
Cu: COLY----------	Fair	Good	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Good	Very poor	Fair
Do: DORRANCE--------	Poor	Poor	Fair	---	---	Poor	Very poor	Very poor	Poor	---	Very poor	Fair
EF: ELTREE----------	Good	Good	Fair	---	---	Fair	Poor	Very poor	Good	---	Very poor	Fair
Ha: HARNEY----------	Good	Good	Good	Poor	Poor	Good	Poor	Fair	Good	---	Poor	Good
HB: HARNEY----------	Good	Good	Good	Poor	Poor	Good	Poor	Fair	Good	---	Poor	Good
He: HARNEY----------	Good	Good	Good	Poor	Poor	Good	Poor	Fair	Good	---	Poor	Good
MENTO----------	Fair	Good	Fair	---	---	Fair	Poor	Poor	Fair	---	Poor	Fair
Hg: HEIZER----------	Very poor	Poor	Poor	---	---	Poor	Very poor	Very poor	Poor	---	Very poor	Poor
BROWNELL--------	Poor	Fair	Fair	---	---	Poor	Very poor	Very poor	Fair	---	Very poor	Poor
Hm: HOLDREGE--------	Good	Good	Fair	Good	Fair	Fair	Very poor	Very poor	Good	Good	Very poor	Fair
Ho: HORD----------	Good	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor	Good
Hu: HUMBARGER-------	Fair	Fair	Good	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Poor	Fair
Hw: HUMBARGER-------	Fair	Good	Fair	---	---	Poor	Poor	Poor	Fair	---	Poor	Poor
If: INAVALE----------	Very poor	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor	Fair
Mc: MCCOOK----------	Good	Good	Good	Good	Fair	Good	Very poor	Very poor	Good	Fair	Very poor	Good
MD: MCCOOK----------	Good	Good	Good	Good	Fair	Good	Very poor	Very poor	Good	Fair	Very poor	Good
Mu: MUNJOR----------	Fair	Fair	Good	Fair	Fair	Good	Poor	Poor	Fair	Fair	Poor	Good
Pf: PENDEN----------	Fair	Good	Fair	---	---	Poor	Very poor	Poor	Fair	---	Very poor	Fair

WILDLIFE INTERPRETATIONS--Continued
Trego County, Kansas

Map symbol and soil name	Potential for habitat elements								Potential as habitat for--			
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hard-wood trees	Conif-erous plants	Shrubs	Wetland plants	Shallow water areas	Open-land wild-life	Wood-land wild-life	Wetland wild-life	Range-land wild-life
Pk: PENDEN	Fair	Good	Fair	---	---	Poor	Very poor	Poor	Fair	---	Very poor	Fair
Po: PENDEN	Poor	Fair	Fair	---	---	Poor	Very poor	Poor	Fair	---	Very poor	Fair
Rf: ROXBURY	Good	Good	Good	Fair	Fair	Fair	Poor	Fair	Good	Fair	Poor	Fair
Ub: ULY	Good	Good	Good	Good	Fair	Fair	Very poor	Very poor	Good	Good	Very poor	Good
Uc: ULY	Fair	Good	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Good	Very poor	Good
Vo: VODA	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good	---
W: WATER	---	---	---	---	---	---	---	---	---	---	---	---
Wb: WAKEEN	Fair	Good	Fair	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair
Wp: WAKEEN	Fair	Good	Fair	---	---	Fair	Poor	Very poor	Fair	---	Very poor	Fair

YIELDS PER ACRE OF PASTURE AND HAYLAND
Trego County, Kansas

Use and Explanation of Pastureland and Hayland Interpretations

This subsection provides information concerning the suitability of soils for the production of pasture and hayland. This subsection may contain pasture and hayland suitability groupings, land capability and yield estimates, yield estimates for individual grasses or legumes, or other information pertaining to the production of forage.

Pasture and Hayland Suitability Groupings

Soils are placed in pasture and hayland groups according to their suitability for the production of forage. The soils in each group are enough alike to be suited to the same grasses or legumes, to have similar limitations and hazards, to require similar management, and to have similar productivity and other responses to management. Thus, the pasture and hayland suitability group is a convenient way of grouping the soils for their management. If used, these groupings are identified and described in other reports in the subsection.

Yield Estimates

The average yields per acre that can be expected of the principal pasture or hayland crops, under a high level of management, are presented in this subsection. In any given year, yields may be higher or lower than those indicated in the tables because of variations in rainfall or other climatic factors. The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

Under good management, proper grazing is essential for the production of high quality forage, stand survival, and erosion control. Proper grazing helps plants maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation are also important management practices.

The Pasture and Hayland table show yield estimates in tons per acre and animal unit months for pasture and hayland groups. An animal unit month is the amount of forage required by one animal unit (AU) for 30 days. On animal unit (AU) is one (1000 pound) mature cow and a calf up to weaning age (usually six months of age) or their equivalent. The Natural Resources Conservation Service uses 900 pounds of air dry forage as the amount needed to meet this requirement. To maintain a healthy and vigorous plant community, the degree of use should never be greater than 50 percent. Therefore only 25 percent of the total biomass grown is considered consumed by the grazing animal. Animal Unit Months can be converted to air dry pounds per acre production by multiplying the AUM by 30 days, then by 30 pounds per day, and then by four. This figure is the amount of total forage production.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil in the Nontechnical Description section. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

YIELDS PER ACRE OF PASTURE AND HAYLAND--Continued
Trego County, Kansas

(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil) Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Smooth bromegrass	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
051AO:						
Armo	4e	---	---	---	3.50	---
051BG:						
Bogue	6e	---	---	---	---	---
051CC:						
Campus	4e	---	---	---	2.00	---
Carlson	3e	---	---	---	3.50	---
051CD:						
Campus	6e	---	---	---	2.00	---
Penden	6e	---	---	---	3.00	---
051EG:						
Eltree	3e	3e	2.00	5.00	3.50	---
051HC:						
Harney	3e	---	---	---	3.50	---
051HD:						
Harney	4e	---	---	---	3.00	---
051HE:						
Armo	4e	---	---	---	3.50	---
Harney	4e	---	---	---	3.00	---
051HK:						
Harney	2e	2e	---	5.50	4.00	8.00
Wakeen	3e	---	---	---	3.00	---
051HL:						
Armo	6e	---	---	---	---	---
Heizer	7s	---	---	---	---	---
051MO:						
Mento	4e	---	---	---	2.00	---
051WH:						
Wakeen	4e	---	---	---	2.50	---
063BR:						
Bridgeport	2w	2w	3.50	6.50	5.00	11.00
063EB:						
Elkader	2e	2e	---	5.00	---	10.00
063EC:						
Elkader	3e	---	---	---	---	---
063ED:						
Elkader	6e	---	---	4.50	---	---
Manvel	6e	4e	---	4.00	---	---
063KP:						
Kim	6e	4e	---	2.50	---	---
Penden	6e	---	---	2.50	---	---
063MA:						
Manvel	4e	---	0.90	---	---	---
063MB:						
Manvel	6e	4e	---	---	---	---
Badland	---	---	---	---	---	---
063MC:						
Munjor	3w	---	2.00	5.00	4.00	---
Bridgeport	2w	2w	3.50	6.50	5.00	11.00
063MD:						
Munjor	3w	---	2.00	5.00	---	---

YIELDS PER ACRE OF PASTURE AND HAYLAND--Continued
Trego County, Kansas

(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil) Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Smooth bromegrass	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
Inavale	4e	3e	1.80	5.00	---	---
063OT: Otero	4e	3e	---	5.00	---	---
063UB: Ulysses	2e	2e	---	5.00	---	---
063UC: Ulysses	3e	3e	---	4.00	---	---
065PH: Penden	3e	---	---	---	3.50	---
065PO: Penden	6e	---	---	---	3.00	---
Uly	6e	---	---	---	2.00	---
065UD: Uly	4e	4e	1.70	4.00	2.50	9.00
065WS: Wakeen	6e	---	---	---	---	---
Nibson	6e	---	---	---	---	---
135CC: Campus	6e	---	---	---	---	---
Canlon	6s	---	---	---	---	---
135RS: Roxbury	2w	2w	3.50	6.50	---	---
135UE: Uly	3e	---	---	---	---	---
Coly	3e	3e	---	4.50	---	---
AED: Arents, Earthen Dam	8	---	---	---	---	---
Ap: Armo	2e	---	---	---	4.00	---
Ar: Armo	3e	---	---	---	---	---
As: Armo	6e	---	---	---	---	---
Bd: Badland	s	---	---	---	---	---
Manvel	6	4e	---	---	---	---
Bg: Bogue	6e	---	---	---	---	---
Br: Brownell	6e	---	---	---	---	---
Cc: Campus	6e	---	---	---	---	---
Canlon	7s	---	---	---	---	---
Cf: Carlson	2e	2e	---	5.50	---	---
Cu: Coly	3e	3e	---	4.50	---	---
Do: Dorrance	6s	6s	---	---	---	---
EF: Eltree	2e	2e	2.50	5.50	4.00	11.00

YIELDS PER ACRE OF PASTURE AND HAYLAND--Continued
Trego County, Kansas

(Yields in the "N" columns are for nonirrigated soils; those in the "I" columns are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil) Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

Map symbol and soil name	Land capability		Alfalfa hay		Smooth bromegrass	
	N	I	N	I	N	I
			Tons	Tons	AUM	AUM
Ha: Harney	2c	1	---	6.50	---	---
HB: Harney	2e	2e	---	5.50	3.00	8.00
He: Harney	2e	2e	---	---	---	---
Mento	3e	---	---	---	---	---
Hg: Heizer	7s	---	---	---	---	---
Brownell	6e	---	---	---	---	---
Hm: Holdrege	2e	2e	2.30	6.00	---	---
Ho: Hord	2c	1	3.00	6.50	3.50	11.00
Hu: Humbarger	5w	---	---	---	---	---
Hw: Humbarger	2w	2w	3.00	6.00	5.00	11.00
If: Inavale	6w	---	---	---	---	---
Mc: Mccook	2w	2w	2.80	6.00	---	---
MD: Mccook	2c	1	2.80	6.00	---	---
Mu: Munjor	3w	---	2.00	---	4.00	---
Pf: Penden	3e	---	---	---	---	---
Pk: Penden	4e	---	---	---	---	---
Po: Penden	6e	---	---	---	---	---
Rf: Roxbury	2c	1	3.00	7.00	4.50	11.00
Ub: Uly	2e	2e	2.40	5.00	---	---
Uc: Uly	3e	3e	1.90	4.50	---	---
Vo: Voda	2w	---	---	---	---	---
W: Water	---	---	---	---	---	---
Wb: Wakeen	3e	---	---	---	3.00	---
Wp: Wakeen	4e	---	---	---	---	---

CONSERVATION TREE AND SHRUB MANAGEMENT
Trego County, Kansas

A Conservation Tree/Shrub Suitability Group (CTSG), formerly Windbreak Suitability Group, is a physiographic unit or area having similar climatic and edaphic characteristics that control the selection and height growth of trees and shrubs.

In this table, the Conservation Tree and Shrub Grouping is expressed as a group index number. The group index for Conservation Tree and Shrub groups (CTSG) are a guide for species best suited for different kinds of soil and for prediction height, growth, and effectiveness. The groupings can be used when selection woody plants for windbreaks, wildlife plantings riparian buffers, reforestation, other environmental plantings, recreation, landscaping, wetland restoration or enhancement and critical area plantings. CTSG's are developed to assure satisfactory species selection and adaptation to specific conditions of soil, climate and physiography. CTSG's are a guide for selection species best suited for different kinds of soil and prediction height growth and effectiveness.

All soil series mapped in the state have been placed in 10 groups of similar soil characteristics. Groups 1, 2, 3, 4, 6, and 9 are further divided into subgroups. In addition, all groups provide information by Major Land Resource Areas.

Each tree or shrub species has certain climatic and physiographic limits. Within these parameters a tree or shrub may be well or poorly suited because of soil characteristics. Each tree or shrub also has definable potentials of height growth depending on the factors just mentioned. Accurate definitions of potential heights are necessary for proper windbreak planning and design.

Windbreaks protect livestock, buildings, roads and yards from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low-growing and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind, help to keep snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Windbreaks are often planted on land that did not grow trees originally. Knowledge of how trees perform on such land can be gained only by observing and recording their performance where trees have been planted and survived. The problem is compounded by the fact that many favorite windbreak species are not indigenous to the areas in which they are planted.

The Kansas Field Office Technical Guide Notice KS-230, Conservation Tree and Shrub Plantings Suitability Groups shows the adapted species listing for each group index number. Showing the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates are based on measurements and observation of established plantings that have been given adequate care. This information should be used to determine the placement of a windbreak, the area protected and the arrangement of species.

A number of attributes are included in the CTSG species tables for each group number found in this section of the Field Office Technical Guide. These attributes were rated subjectively and assigned a relative value to further assist those unfamiliar with individual species characteristics or desirability for the intended use. Definitions and explanations can be found. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery. See part 537 of the National Forestry Manual for additional information.

In the Tree and Shrub Management table interpretive ratings are given for various aspects of forest and conservation tree and shrub management. Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. Well suited indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. Moderately well suited indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable and fair performance can be expected. Some maintenance is needed. Poorly suited indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. Unsuited indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

The paragraphs that follow indicate the soil properties considered in rating the soils for forest and conservation tree and shrub management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet. Also, in the Kansas Field Office Technical Guide Notice KS-230, Conservation Tree and Shrub Plantings Suitability Groups.

Ratings in the columns suitability for hand planting and suitability for mechanical planting are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately well suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column suitability for mechanical site preparation (surface) are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1-foot is considered in the ratings.

Ratings in the column suitability for mechanical site preparation (deep) are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column potential for seedling mortality are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality. See the National Forestry Manual, Subpart B for criteria used in rating management concerns. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

CONSERVATION TREE AND SHRUB MANAGEMENT
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
051AO:						
Armo	8	Well suited	Moderately suited Slope	Well suited	Well suited	Low
051BG:						
Bogue	4C	Poorly suited Stickiness	Poorly suited Stickiness Slope	Poorly suited Stickiness	Well suited	Low
051CC:						
Campus	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
Carlson	3	Moderately suited Stickiness	Moderately suited Stickiness Slope	Well suited	Well suited	Low
051CD:						
Campus	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
Penden	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
051EG:						
Eltree	3	Well suited	Moderately suited Slope	Well suited	Well suited	Low
051HC:						
Harney	3	Moderately suited Stickiness	Moderately suited Stickiness Slope	Well suited	Well suited	Low
051HD:						
Harney	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
051HE:						
Armo	8	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Harney	3	Moderately suited Stickiness	Moderately suited Stickiness Slope	Well suited	Well suited	Low
051HK:						
Harney	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Wakeen	8	Well suited	Well suited	Well suited	Well suited	Moderate Lime Soil reaction
051HL:						
Armo	8	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Heizer	10	Moderately suited Rock fragments	Poorly suited Rock fragments Slope	Poorly suited Slope Rock fragments	Unsuited Restrictive layer Slope	High Lime Soil reaction
051MO:						
Mento	9C	Poorly suited Stickiness	Poorly suited Stickiness Slope	Poorly suited Stickiness	Well suited	Low
051WH:						
Wakeen	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
063BR:						
Bridgeport	1K	Well suited	Well suited	Well suited	Well suited	Low
063EB:						
Elkader	8	Well suited	Well suited	Well suited	Well suited	Moderate Lime Soil reaction
063EC:						
Elkader	8	Well suited	Moderately suited	Well suited	Well suited	Moderate

CONSERVATION TREE AND SHRUB MANAGEMENT
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
			Slope			Lime Soil reaction
063ED:						
Elkader	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
Manvel	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
063KP:						
Kim	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
Penden	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
063MA:						
Manvel	8	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
063MB:						
Manvel	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
Badland		Poorly suited Restrictive layer	Poorly suited Slope	Poorly suited Slope	Poorly suited Slope	High Soil reaction
063MC:						
Munjor	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Bridgeport	1K	Well suited	Well suited	Well suited	Well suited	Low
063MD:						
Munjor	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Inavale	1	Well suited	Well suited	Well suited	Well suited	Low
063OT:						
Otero	5	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
063UB:						
Ulysses	3	Well suited	Well suited	Well suited	Well suited	Low
063UC:						
Ulysses	3	Well suited	Moderately suited Slope	Well suited	Well suited	Low
065PH:						
Penden	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
065PO:						
Penden	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
Uly	3	Well suited	Moderately suited Slope	Well suited	Well suited	Low
065UD:						
Uly	3	Well suited	Moderately suited Slope	Well suited	Well suited	Low
065WS:						
Wakeen	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
Nibson	10	Well suited	Moderately suited Slope Rock fragments	Well suited	Well suited	Moderate Soil reaction Lime
135CC:						
Campus	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
Canlon	10	Well suited	Moderately suited Slope	Well suited	Unsuited Restrictive layer	Moderate Soil reaction

CONSERVATION TREE AND SHRUB MANAGEMENT
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Windbreak Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
135RS:						
Roxbury	1	Well suited	Well suited	Well suited	Well suited	Low
135UE:						
Uly	3	Well suited	Well suited	Well suited	Well suited	Low
Coly	8	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
AED:						
Arents, Earthen Dam		Not rated	Not rated	Not rated	Not rated	Not rated
Ap:						
Armo	8	Well suited	Well suited	Well suited	Well suited	Low
Ar:						
Armo	8	Well suited	Moderately suited Slope	Well suited	Well suited	Low
As:						
Armo	8	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Bd:						
Badland		Not rated	Not rated	Not rated	Not rated	Not rated
Manvel	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
Bg:						
Bogue	4C	Poorly suited Stickiness	Poorly suited Slope Stickiness	Poorly suited Stickiness Slope	Poorly suited Slope	Low
Br:						
Brownell	10	Moderately suited Rock fragments	Poorly suited Rock fragments Slope	Poorly suited Rock fragments	Well suited	High Lime Soil reaction
Cc:						
Campus	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
Canlon	10	Well suited	Poorly suited Slope	Poorly suited Slope	Unsuited Restrictive layer Slope	Moderate Lime Soil reaction
Cf:						
Carlson	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Cu:						
Coly	8	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Do:						
Dorrance	10	Well suited	Moderately suited Slope	Well suited	Well suited	Low
EF:						
Eltree	3	Well suited	Well suited	Well suited	Well suited	Low
Ha:						
Harney	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
HB:						
Harney	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
He:						
Harney	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Mento	9C	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	Low
Hg:						
Heizer	10	Moderately suited Rock fragments	Poorly suited Slope Rock fragments	Poorly suited Slope Rock fragments	Unsuited Restrictive layer Slope	High Lime Soil reaction
Brownell	10	Moderately suited	Poorly suited	Poorly suited	Well suited	High

CONSERVATION TREE AND SHRUB MANAGEMENT
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Pines and spruces are prone to disease problems. See text for further explanation of ratings in this table.)

Map symbol and soil name	Windbreak Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
		Rock fragments	Rock fragments Slope	Rock fragments		Lime Soil reaction
Hm: Holdrege	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Ho: Hord	1	Well suited	Well suited	Well suited	Well suited	Low
Hu: Humbarger	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Hw: Humbarger	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
If: Inavale	1	Well suited	Well suited	Well suited	Well suited	Low
Mc: Mccook	1	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
MD: Mccook	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Mu: Munjor	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Pf: Penden	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
Pk: Penden	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
Po: Penden	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
Rf: Roxbury	1	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Ub: Uly	3	Well suited	Well suited	Well suited	Well suited	Low
Uc: Uly	3	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Vo: Voda	2	Moderately suited Stickiness	Moderately suited Stickiness	Poorly suited Stickiness	Well suited	Moderate Wetness Soil reaction
W: Water		Not rated	Not rated	Not rated	Not rated	Not rated
Wb: Wakeen	8	Well suited	Well suited	Well suited	Well suited	Moderate Lime Soil reaction
Wp: Wakeen	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction

ENGINEERING INDEX PROPERTIES
Trego County, Kansas

Engineering Index Properties table gives the engineering classifications and the range of index properties for the layers of each soil in the survey area. Depth to the upper and lower boundaries of each layer is indicated. Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. Loam, for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, gravelly. Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 1998) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1998). The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle–size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL–ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A–1 through A–7 on the basis of particle–size distribution, liquid limit, and plasticity index. Soils in group A–1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A–7 are fine grained. Highly organic soils are classified in group A–8 on the basis of visual inspection. If laboratory data are available, the A–1, A–2, and A–7 groups are further classified as A–1–a, A–1–b, A–2–4, A–2–5, A–2–6, A–2–7, A–7–5, or A–7–6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in Engineering Index Properties table.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry–weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage. Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination. The estimates of particle–size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

ENGINEERING INDEX PROPERTIES--Continued
Trego County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
051AO:												
Armo----------	0-5	Loam	CL	A-6, A-4	0	0	95-100	90-100	90-100	70-95	25-40	7-18
	5-23	Clay loam	CL	A-4, A-6, A-7	0	0	95-100	90-100	90-100	70-90	25-45	7-22
	23-41	Clay loam	CL	A-4, A-6, A-7	0	0	95-100	85-100	70-100	65-80	25-45	7-22
	41-51	Silt loam	SC, GC, CL	A-4, A-6	0	0	60-85	50-85	50-60	40-55	25-35	8-18
	51-60	Very gravelly loam	GM, SC-SM, SM, SP-SM	A-1, A-2	0	0	50-70	10-25	5-15	5-15	15-25	NP-7
051BG:												
Bogue----------	0-6	Clay	CH, MH	A-7	0	0	100	100	90-100	90-100	55-80	25-45
	6-17	Clay	CH	A-7	0	0	100	100	90-100	90-100	55-80	30-50
	17-23	Clay	CH, MH	A-7	0	0	100	100	90-100	80-100	55-80	25-45
	23-32	Weathered bedrock			---	---	100	100	90-100	80-100	55-80	25-45
	>32	Unweathered bedrock			---	---	---	---	---	---	---	---
051CC:												
Campus----------	0-9	Loam	ML, CL, CL-ML	A-4, A-6	0	0	100	95-100	80-100	55-90	20-40	3-20
	9-19	Clay loam	CL, ML	A-4, A-6, A-7	0	0	100	100	75-95	50-80	33-45	8-20
	19-33	Loam	CL, ML, SC, SM	A-4, A-6, A-7	0	0	90-100	70-100	65-85	40-80	33-45	8-20
	>33	Unweathered bedrock			---	---	---	---	---	---	---	---
Carlson--------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-100	25-40	5-20
	8-18	Silty clay loam	CL, CH	A-7-6	0	0	100	100	90-100	85-100	40-55	20-30
	18-60	Silty clay loam	CL-ML, CL	A-4, A-6, A-7-6	0	0	100	95-100	80-100	55-100	25-45	5-20
051CD:												
Campus----------	0-9	Loam	ML, CL-ML, CL	A-4, A-6	0	0	100	95-100	80-100	55-90	20-40	3-20
	9-19	Clay loam	CL, ML	A-4, A-6, A-7	0	0	100	100	75-95	50-80	33-45	8-20
	19-33	Loam	CL, ML, SC, SM	A-4, A-6, A-7	0	0	90-100	70-100	65-85	40-80	33-45	8-20
	>33	Unweathered bedrock			---	---	---	---	---	---	---	---
Penden----------	0-14	Clay loam	CL	A-6, A-7-6	0	0	100	100	85-100	65-95	30-45	11-25
	14-27	Clay loam	CL	A-6, A-7-6	0	0	100	100	85-100	60-90	30-45	11-25
	27-64	Clay loam	CL	A-6, A-7-6	0	0	100	100	75-100	55-75	30-45	11-25
051EG:												
Eltree----------	0-26	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	100	85-100	65-100	20-40	3-15
	26-35	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-100	85-100	25-40	5-20
	35-63	Silty clay loam	CL	A-4, A-6, A-7-6	0	0	100	95-100	90-100	65-100	25-45	7-22
051HC:												
Harney----------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	6-40	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	40-74	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
051HD:												
Harney----------	0-6	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	15-22
	6-40	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	40-74	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
051HE:												
Harney----------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	6-40	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	40-74	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
Armo----------	0-5	Loam	CL	A-4, A-6	0	0	95-100	90-100	90-100	70-95	25-40	7-18
	5-23	Clay loam	CL	A-4, A-6, A-7	0	0	95-100	90-100	90-100	70-90	25-45	7-22
	23-41	Clay loam	CL	A-4, A-6, A-7	0	0	95-100	85-100	70-100	65-80	25-45	7-22
	41-51	Silt loam	CL, GC, SC	A-4, A-6	0	0	60-85	50-85	50-60	40-55	25-35	8-18
	51-60	Very gravelly loam	GM, SC-SM, SM, SP-SM	A-1, A-2	0	0	50-70	10-25	5-15	5-15	15-25	NP-7
051HK:												
Harney----------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	6-40	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	40-74	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
Wakeen----------	0-5	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	70-90	30-35	10-15
	5-36	Silty clay loam	CL	A-4, A-6, A-7-6	0	0	95-100	85-100	75-100	60-95	30-45	10-20
	>36	Unweathered bedrock			---	---	---	---	---	---	---	---
051HL:												
Heizer----------	0-6	Gravelly loam	GC, GC-GM, SC, SC-SM	A-1, A-2-4, A-2-6	---	0-20	50-90	40-70	30-60	20-35	20-40	5-20
	6-14	Very channery loam	GC, GP-GC, SC, SP-SC	A-1, A-2-4, A-2-6	---	5-50	20-80	10-50	10-45	8-35	20-40	5-20
	>14	Unweathered bedrock			---	---	---	---	---	---	---	---
Armo----------	0-15	Loam	CL	A-4, A-6	0	0	95-100	90-100	90-100	70-95	25-40	7-18
	15-28	Clay loam	CL	A-4, A-6, A-7	0	0	95-100	90-100	90-100	70-90	25-45	7-22
	28-41	Clay loam	CL	A-4, A-6, A-7	0	0	95-100	85-100	70-100	65-80	25-45	7-22
	41-51	Silt loam	CL, GC, SC	A-4, A-6	0	0	60-85	50-85	50-60	40-55	25-35	8-18
	51-60	Very gravelly loam	GM, SC-SM, SM, SP-SM	A-1, A-2	0	0	50-70	10-25	5-15	5-15	15-25	NP-7

ENGINEERING INDEX PROPERTIES--Continued
Trego County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
051MO:												
Mento----------	0-6	Silty clay loam	CL	A-4, A-6, A-7-6	0	0	100	100	90-100	85-100	30-45	8-20
	6-20	Silty clay loam	CH	A-7	0	0	100	95-100	90-100	85-100	50-70	25-45
	20-48	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-100	30-50	11-25
	48-67	Weathered bedrock			---	---	---	---	---	---	---	---
	67-71	Unweathered bedrock			---	---	---	---	---	---	---	---
051WH:												
Wakeen---------	0-11	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	70-90	30-35	10-15
	11-30	Silty clay loam	CL	A-4, A-6, A-7-6	0	0	95-100	85-100	75-100	60-95	30-45	10-20
	>30	Unweathered bedrock			---	---	---	---	---	---	---	---
063BR:												
Bridgeport-----	0-13	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	65-90	20-35	4-19
	13-60	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	65-100	25-40	8-20
063EB:												
Elkader--------	0-9	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	95-100	85-100	80-100	65-90	25-45	7-20
	9-20	Silt loam	ML, CL	A-4, A-6, A-7-6	0	0	95-100	85-100	80-100	70-95	25-50	7-20
	20-60	Silt loam	CL, ML	A-7-6, A-4, A-6	0	0	95-100	85-100	80-100	70-95	25-50	7-20
063EC:												
Elkader--------	0-9	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	95-100	85-100	80-100	65-90	25-45	7-20
	9-20	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	95-100	85-100	80-100	70-95	25-50	7-20
	20-60	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	95-100	85-100	80-100	70-95	25-50	7-20
063ED:												
Elkader--------	0-9	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	95-100	85-100	80-100	65-90	25-45	7-20
	9-20	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	95-100	85-100	80-100	70-95	25-50	7-20
	20-60	Silt loam	ML, CL	A-4, A-6, A-7-6	0	0	95-100	85-100	80-100	70-95	25-50	7-20
Manvel---------	0-3	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	95-100	70-90	25-35	5-15
	3-60	Silt loam	CL-ML, CL	A-4, A-6	0	0	85-100	85-100	85-100	80-90	20-40	5-20
063KP:												
Kim----------	0-5	Clay loam	CL	A-6	0	0-5	90-100	75-100	70-90	50-75	30-40	10-20
	5-60	Clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-5	80-100	75-100	50-95	35-85	20-40	5-15
Penden---------	0-10	Clay loam	CL	A-6, A-7-6	0	0	100	100	85-100	65-95	30-45	11-25
	10-28	Clay loam	CL	A-6, A-7-6	0	0	100	100	85-100	60-90	30-45	11-25
	28-60	Clay loam	CL	A-6, A-7-6	0	0	100	100	75-100	55-75	30-45	11-25
063MA:												
Manvel---------	0-3	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	95-100	70-90	25-35	5-15
	3-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	85-100	85-100	85-100	80-90	20-40	5-20
063MB:												
Manvel---------	0-3	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	95-100	70-90	25-35	5-15
	3-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	85-100	85-100	85-100	80-90	20-40	5-20
Badland--------	0-1	Silt loam			---	---	---	---	---	---	---	---
063MC:												
Munjor---------	0-11	Sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	100	95-100	65-100	25-55	15-30	NP-7
	11-36	Sandy loam	CL, ML, SC, SM	A-4	0	0	100	95-100	65-100	35-65	15-30	3-10
	36-60	Sand	SM, SP-SM	A-2-4, A-3	0	0	95-100	95-100	55-100	5-30	---	NP
Bridgeport-----	0-13	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	100	100	90-100	45-55	15-25	NP-6
	13-60	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	65-100	25-40	8-20
063MD:												
Munjor---------	0-11	Sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	100	95-100	65-100	25-55	15-30	NP-7
	11-36	Sandy loam	CL, ML, SC, SM	A-4	0	0	100	95-100	65-100	35-65	15-30	3-10
	36-60	Sand	SM, SP-SM	A-2-4, A-3	0	0	95-100	95-100	55-100	5-30	---	NP
Inavale--------	0-7	Loamy sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	100	85-95	5-35	15-25	NP-5
	7-18	Loamy sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	90-100	65-85	5-30	15-25	NP-5
	18-60	Loamy sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	90-100	65-85	5-30	15-25	NP-5
063OT:												
Otero----------	0-6	Fine sandy loam	SM	A-2	0	0-1	95-100	75-100	50-80	25-35	20-25	NP-5
	6-60	Sandy loam	SM	A-2	0	0-1	90-100	75-100	40-80	25-35	15-25	NP-5
063UB:												
Ulysses--------	0-7	Silt loam	CL, ML	A-4, A-6	0	0	100	100	90-100	85-100	25-40	3-15
	7-25	Silt loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	25-43	11-20
	25-60	Silt loam	CL, ML	A-4, A-6	0	0	100	100	90-100	85-100	25-40	3-15
063UC:												
Ulysses--------	0-6	Silt loam	CL, ML	A-4, A-6	0	0	100	100	90-100	85-100	25-40	3-15
	6-16	Silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	25-43	11-20
	16-60	Silt loam	CL, ML	A-4, A-6	0	0	100	100	90-100	85-100	25-40	3-15

ENGINEERING INDEX PROPERTIES--Continued
Trego County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
065PH:												
Penden	0-7	Loam	CL	A-4, A-6	0	0	100	100	85-100	65-95	25-40	7-20
	7-27	Clay loam	CL	A-6, A-7-6	0	0	100	100	85-100	60-90	30-45	11-25
	27-60	Clay loam	CL	A-6, A-7-6	0	0	100	100	75-100	55-75	30-45	11-25
065PO:												
Penden	0-7	Loam	CL	A-4, A-6	0	0	100	100	85-100	65-95	25-40	7-20
	7-27	Clay loam	CL	A-6, A-7-6	0	0	100	100	85-100	60-90	30-45	11-25
	27-60	Clay loam	CL	A-6, A-7-6	0	0	100	100	75-100	55-75	30-45	11-25
Uly	0-12	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	20-40	2-20
	12-28	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
	28-60	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
065UD:												
Uly	0-12	Silt loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	20-40	2-20
	12-28	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
	28-60	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
065WS:												
Wakeen	0-12	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	70-90	30-35	10-15
	12-33	Silty clay loam	CL	A-4, A-6, A-7-6	0	0	95-100	85-100	75-100	60-95	30-45	10-20
	>33	Unweathered bedrock			---	---	---	---	---	---	---	---
Nibson	0-6	Silt loam	CL	A-4, A-6	0	0-20	85-100	75-95	65-95	50-85	25-35	7-15
	6-14	Silty clay loam	CL	A-4, A-6, A-7	0	0-20	85-95	75-95	70-95	50-90	30-45	10-20
	>14	Unweathered bedrock			---	---	---	---	---	---	---	---
135CC:												
Campus	0-7	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	80-100	55-90	20-40	3-20
	7-15	Clay loam	CL, ML	A-4, A-6, A-7	0	0	100	100	75-95	50-80	33-45	8-20
	15-28	Clay loam	CL, ML, SC, SM	A-4, A-6, A-7	0	0	90-100	70-100	65-85	40-80	33-45	8-20
	>28	Unweathered bedrock			---	---	---	---	---	---	---	---
Canlon	0-4	Loam	CL, CL-ML	A-4, A-6	0	0	90-100	75-100	65-100	50-90	20-40	4-20
	4-14	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	75-100	55-100	50-95	35-85	20-40	4-20
	>14	Unweathered bedrock			---	---	---	---	---	---	---	---
135RS:												
Roxbury	0-21	Silt loam	CL	A-6	0	0	100	100	90-100	70-90	30-35	10-15
	21-60	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
135UE:												
Uly	0-8	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	20-40	2-20
	8-55	Silty clay loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
	55-60	Silty clay loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
Coly	0-3	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	85-100	85-100	20-45	2-20
	3-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	85-100	85-100	20-40	2-15
AED:												
Arents, Earthen Dam	---	---	---	---	---	---	---	---	---	---	---	---
Ap:												
Armo	0-17	Loam	CL	A-4, A-6	0	0	95-100	90-100	90-100	70-95	25-40	7-18
	17-30	Clay loam	CL	A-4, A-6, A-7	0	0	95-100	90-100	90-100	70-90	25-45	7-22
	30-41	Clay loam	CL	A-7, A-4, A-6	0	0	95-100	85-100	70-100	65-80	25-45	7-22
	41-51	Silt loam	CL, GC, SC	A-4, A-6	0	0	60-85	50-85	50-60	40-55	25-35	8-18
	51-60	Very gravelly loam	GM, SC-SM, SM, SP-SM	A-1, A-2	0	0	50-70	10-25	5-15	5-15	15-25	NP-7
Ar:												
Armo	0-19	Loam	CL	A-4, A-6	0	0	95-100	90-100	90-100	70-95	25-40	7-18
	19-37	Loam	CL	A-4, A-6, A-7	0	0	95-100	90-100	90-100	70-90	25-45	7-22
	37-60	Loam	CL	A-4, A-6, A-7	0	0	95-100	85-100	70-100	65-80	25-45	7-22
As:												
Armo	0-16	Loam	CL	A-4, A-6	0	0	95-100	90-100	90-100	70-95	25-40	7-18
	16-38	Loam	CL	A-4, A-6, A-7	0	0	95-100	90-100	90-100	70-90	25-45	7-22
	38-60	Loam	CL	A-4, A-6, A-7	0	0	95-100	85-100	70-100	65-80	25-45	7-22
Bd:												
Badland	0-1	Silt loam			---	---	---	---	---	---	---	---
Manvel	0-3	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	95-100	70-90	25-35	5-15
	3-60		CL, CL-ML	A-4, A-6	0	0	85-100	85-100	85-100	80-90	20-40	5-20
Bg:												
Bogue	0-6	Clay	CH, MH	A-7	0	0	100	100	90-100	90-100	55-80	25-45
	6-19	Clay	CH	A-7	0	0	100	100	90-100	90-100	55-80	30-50
	19-27	Clay	CH, MH	A-7	0	0	100	100	90-100	80-100	55-80	25-45
	>27	Unweathered bedrock			---	---	---	---	---	---	---	---
Br:												
Brownell	0-8	Gravelly loam	GC, GC-GM, SC, SC-SM	A-1, A-2-4, A-2-6	---	0-20	50-90	40-70	30-60	20-35	20-40	5-20
	8-28	Very channery loam	GC, GP-GC, SC, SP-SC	A-1, A-2-4, A-2-6	---	5-50	20-80	10-50	10-45	8-35	20-40	5-20
	>28	Unweathered bedrock			---	---	---	---	---	---	---	---

ENGINEERING INDEX PROPERTIES--Continued
Trego County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Cc:												
Campus	0-7	Loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	80-100	55-90	20-40	3-20
	7-14	Loam	CL, ML	A-4, A-6, A-7	0	0	100	100	75-95	50-80	33-45	8-20
	14-36	Loam	CL, ML, SC, SM	A-4, A-6, A-7	0	0	90-100	70-100	65-85	40-80	33-45	8-20
	>36	Unweathered bedrock			---	---	---	---	---	---	---	---
Canlon	0-8	Loam	CL, CL-ML	A-4, A-6	0	0	90-100	75-100	65-100	50-90	20-40	4-20
	8-18	Gravelly loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	75-100	55-100	50-95	35-85	20-40	4-20
	>18	Unweathered bedrock			---	---	---	---	---	---	---	---
Cf:												
Carlson	0-4	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-100	25-40	5-20
	4-24	Silty clay loam	CH, CL	A-7-6	0	0	100	100	90-100	85-100	40-55	20-30
	24-60	Clay loam	CL, CL-ML	A-4, A-6, A-7-6	0	0	100	95-100	80-100	55-100	25-45	5-20
Cu:												
Coly	0-4	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7	0	0	100	100	85-100	85-100	20-45	2-20
	4-60	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	85-100	85-100	20-40	2-15
Do:												
Dorrance	0-11	Sandy loam	SC, SC-SM	A-2, A-4	0	0	95-100	85-100	45-90	25-50	15-25	4-10
	11-16	Gravelly sandy loam	SC-SM, SM, SP-SM	A-1, A-2	---	0-5	70-100	50-95	25-65	12-35	15-25	NP-7
	16-60	Gravelly sand	SP, SP-SM	A-1, A-2, A-3	0	0	80-100	50-95	15-60	1-10	15-20	NP
EF:												
Eltree	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	85-100	65-100	20-40	3-15
	9-25	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-100	85-100	25-40	5-20
	25-60	Silt loam	CL	A-4, A-6, A-7-6	0	0	100	95-100	90-100	65-100	25-45	7-22
Ha:												
Harney	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	5-33	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	33-60	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
HB:												
Harney	0-10	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	10-28	Silty clay loam	CL, CH	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	28-60	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
He:												
Harney	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	11-27	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	40-60	15-35
	27-60	Silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
Mento	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-100	25-40	5-15
	8-22	Silty clay	CH	A-7	0	0	100	95-100	90-100	85-100	50-70	25-45
	22-46	Silt loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-100	30-50	11-25
	46-60	Clay loam	CL, GC, SC	A-6, A-7-6	0	0	70-100	65-95	55-95	40-80	35-50	15-30
Hg:												
Heizer	0-6	Gravelly loam	SC-SM, GC, GC-GM, SC	A-1, A-2-4, A-2-6	---	0-20	50-90	40-70	30-60	20-35	20-40	5-20
	6-15	Very channery loam	GC, GP-GC, SC, SP-SC	A-1, A-2-4, A-2-6	---	5-50	20-80	10-50	10-45	8-35	20-40	5-20
	>15	Unweathered bedrock			---	---	---	---	---	---	---	---
Brownell	0-9	Gravelly loam	GC, GC-GM, SC, SC-SM	A-1, A-2-4, A-2-6	---	0-20	50-90	40-70	30-60	20-35	20-40	5-20
	9-24	Very channery loam	GC, GP-GC, SC, SP-SC	A-1, A-2-4, A-2-6	---	5-50	20-80	10-50	10-45	8-35	20-40	5-20
	>24	Unweathered bedrock			---	---	---	---	---	---	---	---
Hm:												
Holdrege	0-11	Silt loam	ML, CL, CL-ML	A-4, A-6, A-7	0	0	100	100	95-100	85-100	20-45	2-20
	11-33	Silty clay loam	CL, CH	A-6, A-7	0	0	100	100	98-100	90-100	30-55	15-35
	33-48	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	25-40	9-17
	48-66	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	5-15
Ho:												
Hord	0-13	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	20-35	3-18
	13-36	Silty clay loam	CL	A-4, A-6	0	0	100	100	98-100	85-100	25-40	8-23
	36-60	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	85-100	25-40	6-21
Hu:												
Humbarger	0-28	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	90-100	65-90	20-35	4-15
	28-33	Loam	CL	A-4, A-6	0	0	95-100	90-100	80-95	55-85	25-40	8-20
	33-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	95-100	90-100	80-95	40-80	20-40	5-20
Hw:												
Humbarger	0-21	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	90-100	65-90	20-35	4-15
	21-31	Clay loam	CL	A-4, A-6	0	0	95-100	90-100	80-95	55-85	25-40	8-20
	31-60	Loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	95-100	90-100	80-95	40-80	20-40	5-20
If:												
Inavale	0-6	Loamy sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	100	85-95	5-35	15-25	NP-5
	6-60	Sand	SC-SM, SM, SP-SM	A-2, A-3	0	0	100	90-100	65-85	5-30	15-25	NP-5
Mc:												
Mccook	0-14	Silt loam	ML, CL, CL-ML	A-4	0	0	100	100	95-100	60-100	20-35	2-10
	14-60	Silt loam	CL-ML, ML, CL	A-4	0	0	100	100	95-100	80-100	15-20	NP-10

ENGINEERING INDEX PROPERTIES--Continued
Trego County, Kansas

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
MD:												
Mccook	0-11	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	60-100	20-35	2-10
	11-60	Silt loam	CL, CL-ML, ML	A-4	0	0	100	100	95-100	80-100	15-20	NP-10
Mu:												
Munjor	0-6	Sandy loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0	100	95-100	65-100	25-55	15-30	NP-7
	6-46	Fine sandy loam	CL, ML, SC, SM	A-4	0	0	100	95-100	65-100	35-65	15-30	3-10
	46-60	Fine sandy loam	SM, SP-SM	A-2-4, A-3	0	0	95-100	95-100	55-100	5-30	---	NP
Pf:												
Penden	0-10	Clay loam	CL	A-6, A-7-6	0	0	100	100	85-100	65-95	30-45	11-25
	10-33	Loam	CL	A-6, A-7-6	0	0	100	100	85-100	60-90	30-45	11-25
	33-60	Loam	CL	A-6, A-7-6	0	0	100	100	75-100	55-75	30-45	11-25
Pk:												
Penden	0-5	Clay loam	CL	A-6, A-7-6	0	0	100	100	85-100	65-95	30-45	11-25
	5-30	Loam	CL	A-6, A-7-6	0	0	100	100	85-100	60-90	30-45	11-25
	30-60	Loam	CL	A-6, A-7-6	0	0	100	100	75-100	55-75	30-45	11-25
Po:												
Penden	0-14	Loam	CL	A-4, A-6	0	0	100	100	85-100	65-95	25-40	7-20
	14-32	Loam	CL	A-6, A-7-6	0	0	100	100	85-100	60-90	30-45	11-25
	32-60	Loam	CL	A-6, A-7-6	0	0	100	100	75-100	55-75	30-45	11-25
Rf:												
Roxbury	0-29	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	70-90	30-35	10-15
	29-40	Silt loam	CL	A-4, A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-20
	40-60	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	100	100	85-100	65-95	30-45	10-20
Ub:												
Uly	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	20-40	2-20
	8-55	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
	55-60	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	100	95-100	25-40	3-15
Uc:												
Uly	0-8	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	20-40	2-20
	8-22	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
	22-60	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	25-40	3-15
Vo:												
Voda	0-7	Silty clay loam	CL	A-4, A-6, A-7	0	0	100	100	95-100	80-100	30-50	8-25
	7-24	Silty clay	CH, CL	A-7-6	0	0	100	100	95-100	90-100	45-70	20-40
	24-60	Silt loam	CL-ML, ML, CL	A-4	0	0	100	95-100	80-100	65-95	15-30	NP-10
W:												
Water	---	---	---	---	---	---	---	---	---	---	---	---
Wb:												
Wakeen	0-10	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	70-90	30-35	10-15
	10-31	Silty clay loam	CL	A-4, A-6, A-7-6	0	0	95-100	85-100	75-100	60-95	30-45	10-20
	>31	Unweathered bedrock			---	---	---	---	---	---	---	---
Wp:												
Wakeen	0-4	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	70-90	30-35	10-15
	4-33	Silty clay loam	CL	A-4, A-6, A-7-6	0	0	95-100	85-100	75-100	60-95	30-45	10-20
	>33	Unweathered bedrock			---	---	---	---	---	---	---	---

PHYSICAL PROPERTIES OF THE SOILS
Trego County, Kansas

Physical Properties table shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink–swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth moving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3– or 1/10–bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table,the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink–swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K<–>sat) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K<–>sat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3– or 1/10–bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink–swell potential of soils. The shrink–swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In Physical Properties table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the Physical Properties table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine–earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to

PHYSICAL PROPERTIES OF THE SOILS--Continued
Trego County, Kansas

wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.

2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.

8. Soils that are not subject to wind erosion because of coarse fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and forzen soil layers also influence wind erosion.

Explanation of Wind Erodibility Groups

Soil erodibility by wind is directly related to the percentage of dry non-erodible surface soil aggregates larger than 0.84 mm in diameter. From this percentage, the wind erodibility index (I-factor) is determined. The I-factor is an expression of the stability of these soil aggregates against breakdown by tillage and abrasion from wind erosion. Soils are placed in Wind Erodibility Groups (WEG) having similar percentages of dry soil aggregates larger than 0.84 mm as shown in the following table.

WEG	Properties of Soil Surface Layer	Dry Soil Aggregates >0.84mm Percent	Wind Erodibilty Index T/Ac/Yr (I)
1	Very fine sand, fine sand, sand, or coarse sand	1	310 1/
		2	250
		3	220
		5	180
		7	160
2	Loamy very fine sand, loamy fine sand, loamy sand, loamy coarse sand, organic soil materials.	10	134
3	Very fine sandy loam, fine sandy loam, sandy loam, or coarse sandy loam.	25	86
4	Clay, silty clay, non-calcareous clay loam, or silty clay loam with >35 percent clay content.	25	86
4L	Calcareous 2/ loam, silt loam, clay loam, or silty clay loam.	25	86
5	Non-calcareous loam and silt loam with <20 percent clay content, or sandy clay loam, sandy clay, and hemic 3/ organic soil materials.	40	56
6	Non-calcareous loam and silt loam with >20 percent clay content, or non-calcareous clay loam with <35 percent clay content.	45	48
7	Silt, non-calcareous silty clay loam with >35 percent clay content and fibric 3/ organic soil material.	50	38
8	Soils not suitable for cultivation due to coarse fragments or wetness; wind erosion is not a problem.	--	0

1/ The "I" values for WEG 1 vary from 160 for coarse sands to 310 for very fine sands. Use an "I" of 220 as an average figure. For coarser sand that has gravel, use a lower figure. For a soil that has no gravel and very fine sand, use a higher figure. (Modification for coarse fragments is preparation.)

2/ Calcareous is a strongly or violently effervescent reaction to cold dilute (1N) HCL.

3/ See Soil Taxonomy for definition.

PHYSICAL PROPERTIES OF THE SOILS--Continued
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(Single entries under "Sand and Silt" are a representative percentage are calculated using an algorithm. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
051AO:														
Armo----------	0-5	40	38	18-27	1.25-1.40	0.60-2.00	0.21-0.24	0.0-2.9	1.0-3.0	.28	.28	5	4L	86
	5-23	35	38	18-35	1.30-1.40	0.60-2.00	0.18-0.22	0.0-2.9	---	.28	.28			
	23-41	35	38	18-35	1.30-1.45	0.60-2.00	0.15-0.21	0.0-2.9	---	.28	.32			
	41-51	24	52	18-30	1.30-1.50	0.60-2.00	0.15-0.21	0.0-2.9	---	.28	.43			
	51-60	43	38	12-25	1.35-1.50	2.00-6.00	0.02-0.05	0.0-2.9	---	.28	.64			
051BG:														
Bogue---------	0-6	11	26	50-75	1.10-1.30	0.00-0.06	0.11-0.14	6.0-8.9	0.5-3.5	.28	.28	3	4	86
	6-17	9	21	60-80	1.30-1.45	0.00-0.06	0.09-0.11	6.0-8.9	0.5-2.0	.28	.28			
	17-23	9	21	60-80	1.30-1.45	0.00-0.06	0.09-0.11	6.0-8.9	0.5-1.5	.28	.28			
	23-32			60-80	---	0.00-0.06	0.09-0.11	---	0.5-1.0	.28	.28			
	>32			---	---	---	---	---	---	---	---			
051CC:														
Campus--------	0-9	42	37	15-27	1.25-1.35	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.28	2	4L	86
	9-19	35	38	18-35	1.30-1.40	0.60-2.00	0.17-0.19	0.0-2.9	---	.28	.32			
	19-33	38	36	18-35	1.40-1.60	0.60-2.00	0.15-0.19	0.0-2.9	---	.28	.32			
	>33			---	---	---	---	---	---	---	---			
Carlson-------	0-8	26	53	15-27	1.30-1.40	0.60-2.00	0.19-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	8-18	7	53	35-45	1.35-1.50	0.20-0.60	0.14-0.19	3.0-5.9	---	.43	.43			
	18-60	20	54	18-35	1.35-1.50	0.60-2.00	0.16-0.20	0.0-2.9	---	.43	.43			
051CD:														
Campus--------	0-9	42	37	15-27	1.25-1.35	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.28	2	4L	86
	9-19	35	38	18-35	1.30-1.40	0.60-2.00	0.17-0.19	0.0-2.9	---	.28	.32			
	19-33	38	36	18-35	1.40-1.60	0.60-2.00	0.15-0.19	0.0-2.9	---	.28	.32			
	>33			---	---	---	---	---	---	---	---			
Penden--------	0-14	35	33	28-35	1.30-1.45	0.60-2.00	0.17-0.22	3.0-5.9	1.0-4.0	.28	.28	5	4L	86
	14-27	34	37	24-35	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.37	.37			
	27-64	34	37	24-35	1.30-1.50	0.60-2.00	0.14-0.19	3.0-5.9	---	.37	.37			
051EG:														
Eltree--------	0-26	12	69	12-27	1.25-1.35	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	26-35	10	68	18-27	1.30-1.45	0.60-2.00	0.17-0.22	0.0-2.9	---	.43	.43			
	35-63	7	66	18-35	1.35-1.45	0.60-2.00	0.17-0.20	0.0-2.9	---	.43	.43			
051HC:														
Harney--------	0-6	24	51	22-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	6-40	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	---	.43	.43			
	40-74	18	52	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
051HD:														
Harney--------	0-6	20	48	28-35	1.30-1.40	0.60-2.00	0.21-0.23	3.0-5.9	2.0-4.0	.32	.32	5	7	38
	6-40	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	---	.43	.43			
	40-74	18	52	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
051HE:														
Armo----------	0-5	40	38	18-27	1.25-1.40	0.60-2.00	0.21-0.24	0.0-2.9	1.0-3.0	.28	.28	5	4L	86
	5-23	35	38	18-35	1.30-1.40	0.60-2.00	0.18-0.22	0.0-2.9	---	.28	.28			
	23-41	35	38	18-35	1.30-1.45	0.60-2.00	0.15-0.21	0.0-2.9	---	.28	.32			
	41-51	24	52	18-30	1.30-1.50	0.60-2.00	0.15-0.21	0.0-2.9	---	.28	.43			
	51-60	43	38	12-25	1.35-1.50	2.00-6.00	0.02-0.05	0.0-2.9	---	.28	.64			
Harney--------	0-6	24	51	22-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	6-40	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	---	.43	.43			
	40-74	18	52	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
051HK:														
Harney--------	0-6	24	51	22-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	6-40	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	---	.43	.43			
	40-74	20	50	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
Wakeen--------	0-5	10	68	18-27	1.30-1.45	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	5-36	7	66	18-35	1.35-1.50	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.43	.49			
	>36			---	---	---	---	---	---	---	---			
051HL:														
Armo----------	0-15	40	38	18-27	1.25-1.40	0.60-2.00	0.21-0.24	0.0-2.9	1.0-3.0	.28	.28	5	4L	86
	15-28	35	38	18-35	1.30-1.40	0.60-2.00	0.18-0.22	0.0-2.9	---	.28	.28			
	28-41	35	38	18-35	1.30-1.45	0.60-2.00	0.15-0.21	0.0-2.9	---	.28	.32			
	41-51	24	52	18-30	1.30-1.50	0.60-2.00	0.15-0.21	0.0-2.9	---	.28	.43			
	51-60	43	38	12-25	1.35-1.50	2.00-6.00	0.02-0.05	0.0-2.9	---	.28	.64			
Heizer--------	0-6	42	37	15-27	1.30-1.45	0.60-2.00	0.10-0.16	0.0-2.9	---	.20	.55	1	8	0
	6-14	42	37	15-27	1.35-1.50	0.60-2.00	0.06-0.13	0.0-2.9	---	.24	.64			
	>14			---	---	---	---	---	---	---	---			
051MO:														
Mento---------	0-6	20	48	28-35	1.30-1.40	0.20-0.60	0.21-0.23	3.0-5.9	1.0-3.0	.37	.37	3	6	48
	6-20	7	53	35-45	1.35-1.45	0.06-0.20	0.12-0.18	6.0-8.9	---	.37	.37			
	20-48	20	52	21-35	1.30-1.40	0.20-0.60	0.18-0.20	3.0-5.9	---	.37	.37			
	48-67			---	---	---	---	---	---	---	---			
	67-71			---	---	---	---	---	---	---	---			
051WH:														
Wakeen--------	0-11	10	68	18-27	1.30-1.45	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	11-30	7	66	18-35	1.35-1.50	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.43	.49			
	>30			---	---	---	---	---	---	---	---			
063BR:														
Bridgeport----	0-13	11	68	14-27	1.30-1.40	0.60-2.00	0.20-0.24	0.0-2.9	1.0-4.0	.32	.32	5	4L	86
	13-60	9	67	18-30	1.35-1.50	0.60-2.00	0.17-0.22	0.0-2.9	---	.43	.43			
063EB:														
Elkader-------	0-9	11	68	15-27	1.20-1.35	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	4	4L	86
	9-20	9	64	18-35	1.25-1.40	0.60-2.00	0.17-0.22	0.0-2.9	---	.43	.49			
	20-60	9	64	18-35	1.25-1.40	0.60-2.00	0.15-0.22	0.0-2.9	---	.43	.49			

PHYSICAL PROPERTIES OF THE SOILS--Continued
Trego County, Kansas: Published

(Single entries under "Sand and Silt" are a representative percentage are calculated using an algorithm. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
063EC:														
Elkader------	0-9	11	68	15-27	1.20-1.35	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	4	4L	86
	9-20	9	64	18-35	1.25-1.40	0.60-2.00	0.17-0.22	0.0-2.9	---	.43	.49			
	20-60	9	64	18-35	1.25-1.40	0.60-2.00	0.15-0.22	0.0-2.9	---	.43	.49			
063ED:														
Elkader------	0-9	11	68	15-27	1.20-1.35	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	4	4L	86
	9-20	9	64	18-35	1.25-1.40	0.60-2.00	0.17-0.22	0.0-2.9	0.0-1.0	.43	.49			
	20-60	9	64	18-35	1.25-1.40	0.60-2.00	0.15-0.22	0.0-2.9	0.0-1.0	.43	.49			
Manvel-------	0-3	11	68	15-27	1.30-1.40	0.60-2.00	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37	5	4L	86
	3-60	9	64	18-35	1.35-1.40	0.20-0.60	0.16-0.18	3.0-5.9	---	.43	.43			
063KP:														
Kim----------	0-5	35	33	28-35	1.30-1.40	0.20-0.60	0.17-0.20	0.0-2.9	0.5-1.0	.28	.28	5	4L	86
	5-60	35	38	20-35	1.40-1.50	0.60-2.00	0.15-0.17	0.0-2.9	0.1-0.5	.32	.32			
Penden-------	0-10	35	33	28-35	1.30-1.45	0.60-2.00	0.17-0.22	3.0-5.9	1.0-4.0	.28	.28	5	4L	86
	10-28	34	37	24-35	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.32	.32			
	28-60	34	37	24-35	1.30-1.50	0.60-2.00	0.14-0.19	3.0-5.9	---	.32	.32			
063MA:														
Manvel-------	0-3	11	68	15-27	1.30-1.40	0.60-2.00	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37	5	4L	86
	3-60	9	64	18-35	1.35-1.40	0.20-0.60	0.16-0.18	3.0-5.9	0.0-1.0	.43	.43			
063MB:														
Manvel-------	0-3	11	68	15-27	1.30-1.40	0.60-2.00	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37	5	4L	86
	3-60	9	64	18-35	1.35-1.40	0.20-0.60	0.16-0.18	3.0-5.9	0.0-1.0	.43	.43			
Badland------	0-1			---	---	---	---	---	---	---	---	-	---	---
063MC:														
Munjor-------	0-11	66	23	7-15	1.30-1.40	2.00-6.00	0.14-0.20	0.0-2.9	0.5-1.0	.24	.24	4	3	86
	11-36	66	23	7-15	1.30-1.40	2.00-6.00	0.13-0.18	0.0-2.9	---	.24	.24			
	36-60	96	2	1-5	1.40-1.50	5.95-19.98	0.06-0.09	0.0-2.9	---	.15	.15			
Bridgeport---	0-13	64	26	5-15	1.30-1.40	2.00-6.00	0.16-0.18	0.0-2.9	1.0-3.0	.20	.20	5	3	86
	13-60	9	67	18-30	1.35-1.50	0.60-2.00	0.17-0.22	0.0-2.9	---	.43	.43			
063MD:														
Munjor-------	0-11	66	23	7-15	1.30-1.40	2.00-6.00	0.14-0.20	0.0-2.9	0.5-1.0	.24	.24	4	3	86
	11-36	66	23	7-15	1.30-1.40	2.00-6.00	0.13-0.18	0.0-2.9	---	.24	.24			
	36-60	96	2	1-5	1.40-1.50	5.95-19.98	0.06-0.09	0.0-2.9	---	.15	.15			
Inavale------	0-7	85	9	2-10	1.50-1.60	5.95-19.98	0.10-0.12	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	7-18	84	9	3-10	1.50-1.60	5.95-19.98	0.06-0.11	0.0-2.9	0.5-0.5	.17	.17			
	18-60	84	9	3-10	1.50-1.60	5.95-19.98	0.05-0.11	0.0-2.9	0.5-0.5	.17	.17			
063OT:														
Otero--------	0-6	65	20	10-20	1.40-1.45	2.00-6.00	0.11-0.13	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	6-60	65	23	5-18	1.45-1.50	2.00-6.00	0.08-0.12	0.0-2.9	---	.24	.24			
063UB:														
Ulysses------	0-7	12	70	10-27	1.15-1.25	0.60-2.00	0.20-0.24	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	7-25	9	64	21-32	1.20-1.35	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.43	.43			
	25-60	10	68	18-27	1.25-1.35	0.60-2.00	0.18-0.22	0.0-2.9	0.0-0.5	.43	.43			
063UC:														
Ulysses------	0-6	12	70	10-27	1.15-1.25	0.60-2.00	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	6-16	7	66	21-32	1.25-1.35	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.43	.43			
	16-60	10	68	18-27	1.25-1.35	0.60-2.00	0.17-0.22	0.0-2.9	0.0-0.5	.43	.43			
065PH:														
Penden-------	0-7	39	37	20-27	1.30-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-4.0	.28	.28	5	4L	86
	7-27	34	37	24-35	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.32	.32			
	27-60	34	37	24-35	1.30-1.50	0.60-2.00	0.14-0.19	3.0-5.9	---	.32	.32			
065PO:														
Penden-------	0-7	39	37	20-27	1.30-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-4.0	.28	.28	5	4L	86
	7-27	34	37	24-35	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.32	.32			
	27-60	34	37	24-35	1.30-1.50	0.60-2.00	0.14-0.19	3.0-5.9	---	.32	.32			
Uly----------	0-12	11	67	17-27	1.20-1.30	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	12-28	9	66	20-30	1.20-1.30	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
	28-60	10	68	18-27	1.10-1.20	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
065UD:														
Uly----------	0-12	11	67	17-27	1.20-1.30	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	12-28	9	66	20-30	1.20-1.30	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
	28-60	10	68	18-27	1.10-1.20	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
065WS:														
Wakeen-------	0-12	10	68	18-27	1.30-1.45	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.32	.43	3	4L	86
	12-33	7	66	18-35	1.35-1.50	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.43	.49			
	>33			---	---	---	---	---	---	---	---			
Nibson-------	0-6	26	53	15-27	1.25-1.35	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	2	4L	86
	6-14	20	54	18-35	1.30-1.40	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.43	.49			
	>14			---	---	---	---	---	---	---	---			
135CC:														
Campus-------	0-7	42	37	15-27	1.25-1.35	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.32	2	4L	86
	7-15	35	38	18-35	1.30-1.40	0.60-2.00	0.17-0.19	0.0-2.9	1.0-2.0	.28	.32			
	15-28	35	38	18-35	1.40-1.50	0.60-2.00	0.15-0.19	0.0-2.9	0.5-1.0	.28	.32			
	>28			---	---	---	---	---	---	---	---			
Canlon-------	0-4	42	38	12-27	1.35-1.45	0.60-2.00	0.20-0.22	0.0-2.9	0.5-1.0	.32	.32	1	4L	86
	4-14	43	40	8-27	1.40-1.50	0.60-2.00	0.15-0.22	0.0-2.9	0.5-1.0	.32	.43			
	>14			---	---	---	---	---	---	---	---			
135RS:														
Roxbury------	0-21	10	68	18-27	1.35-1.45	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	21-60	7	66	18-35	1.40-1.50	0.60-2.00	0.17-0.22	3.0-5.9	1.0-2.0	.43	.43			

PHYSICAL PROPERTIES OF THE SOILS--Continued
Trego County, Kansas: Published

(Single entries under "Sand and Silt" are a representative percentage are calculated using an algorithm. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
135UE:														
Uly----------	0-8	11	67	17-27	1.20-1.30	0.60-2.00	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	8-55	7	68	20-30	1.20-1.30	0.60-2.00	0.18-0.22	0.0-2.9	0.7-1.5	.43	.43			
	55-60	8	70	18-27	1.10-1.20	0.60-2.00	0.17-0.22	0.0-2.9	0.4-0.7	.43	.43			
Coly---------	0-3	11	68	18-24	1.40-1.50	0.60-2.00	0.22-0.24	0.0-2.9	0.5-1.0	.43	.43	5	4L	86
	3-60	11	68	18-24	1.40-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.1-0.5	.43	.43			
AED:														
Arents, Earthen Dam-	---			---	---	---	---	---	---	---	---	-	---	---
Ap:														
Armo---------	0-17	40	38	18-27	1.25-1.40	0.60-2.00	0.21-0.24	0.0-2.9	1.0-3.0	.28	.28	5	4L	86
	17-30	35	38	18-35	1.30-1.40	0.60-2.00	0.18-0.22	0.0-2.9	---	.28	.32			
	30-41	35	38	18-35	1.30-1.45	0.60-2.00	0.15-0.21	0.0-2.9	---	.28	.32			
	41-51	24	52	18-30	1.30-1.50	0.60-2.00	0.15-0.21	0.0-2.9	---	.28	.43			
	51-60	43	38	12-25	1.35-1.50	2.00-6.00	0.02-0.05	0.0-2.9	---	.28	.64			
Ar:														
Armo---------	0-19	40	38	18-27	1.25-1.40	0.60-2.00	0.21-0.24	0.0-2.9	1.0-3.0	.28	.28	5	4L	86
	19-37	38	36	18-35	1.30-1.40	0.60-2.00	0.18-0.22	0.0-2.9	---	.28	.28			
	37-60	38	36	18-35	1.30-1.45	0.60-2.00	0.15-0.21	0.0-2.9	---	.28	.32			
As:														
Armo---------	0-16	40	38	18-27	1.25-1.40	0.60-2.00	0.21-0.24	0.0-2.9	1.0-3.0	.28	.28	5	4L	86
	16-38	38	36	18-35	1.30-1.40	0.60-2.00	0.18-0.22	0.0-2.9	---	.28	.28			
	38-60	38	36	18-35	1.30-1.45	0.60-2.00	0.15-0.21	0.0-2.9	---	.28	.32			
Bd:														
Badland------	0-1			---	---	---	---	---	---	---	---	-	---	0
Manvel-------	0-3	11	68	15-27	1.30-1.40	0.60-2.00	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37	5	4L	86
	3-60	9	64	18-35	1.35-1.40	0.20-0.60	0.16-0.18	3.0-5.9	0.0-1.0	.43	.43			
Bg:														
Bogue--------	0-6	11	26	50-75	1.10-1.30	0.00-0.06	0.11-0.14	6.0-8.9	0.5-1.0	.28	.28	3	4	86
	6-19	9	21	60-80	1.30-1.45	0.00-0.06	0.09-0.11	6.0-8.9	---	.28	.28			
	19-27	9	21	60-80	1.30-1.45	0.00-0.06	0.09-0.11	6.0-8.9	---	.28	.28			
	>27			---	---	---	---	---	---	---	---			
Br:														
Brownell-----	0-8	42	37	15-27	1.30-1.45	0.60-2.00	0.10-0.16	0.0-2.9	1.0-2.0	.20	.49	2	8	0
	8-28	42	37	15-27	1.35-1.50	0.60-2.00	0.06-0.13	0.0-2.9	---	.20	.64			
	>28			---	---	---	---	---	---	---	---			
Cc:														
Campus-------	0-7	42	37	15-27	1.25-1.35	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.28	2	4L	86
	7-14	38	36	18-35	1.30-1.40	0.60-2.00	0.17-0.19	0.0-2.9	---	.28	.32			
	14-36	38	36	18-35	1.40-1.60	0.60-2.00	0.15-0.19	0.0-2.9	---	.28	.32			
	>36			---	---	---	---	---	---	---	---			
Canlon-------	0-8	42	38	12-27	1.30-1.45	0.60-2.00	0.15-0.24	0.0-2.9	0.5-2.0	.32	.32	1	4L	86
	8-18	43	40	8-27	1.35-1.50	0.60-2.00	0.15-0.22	0.0-2.9	---	.32	.43			
	>18			---	---	---	---	---	---	---	---			
Cf:														
Carlson------	0-4	26	53	15-27	1.30-1.40	0.60-2.00	0.19-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	4-24	7	53	35-45	1.35-1.50	0.20-0.60	0.14-0.19	3.0-5.9	---	.43	.43			
	24-60	35	38	18-35	1.35-1.50	0.60-2.00	0.16-0.20	0.0-2.9	---	.43	.43			
Cu:														
Coly---------	0-4	11	68	18-24	1.30-1.50	0.60-2.00	0.20-0.24	0.0-2.9	0.5-1.0	.43	.43	5	4L	86
	4-60	11	68	18-24	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	0.2-0.5	.43	.43			
Do:														
Dorrance-----	0-11	66	19	10-20	1.35-1.45	2.00-6.00	0.14-0.18	0.0-2.9	1.0-3.0	.20	.20	3	3	86
	11-16	65	23	5-18	1.50-1.65	5.95-19.98	0.07-0.12	0.0-2.9	---	.10	.17			
	16-60	95	1	1-7	1.60-1.70	19.98-19.98	0.02-0.06	0.0-2.9	---	.10	.17			
EF:														
Eltree-------	0-9	12	69	12-27	1.25-1.35	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	4L	86
	9-25	10	68	18-27	1.30-1.45	0.60-2.00	0.17-0.22	0.0-2.9	---	.43	.43			
	25-60	9	64	18-35	1.35-1.45	0.60-2.00	0.17-0.20	0.0-2.9	---	.43	.43			
Ha:														
Harney-------	0-5	24	51	22-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-33	7	54	35-42	1.40-1.50	0.20-0.60	0.11-0.20	3.0-5.9	1.0-2.0	.37	.37			
	33-60	18	52	24-35	1.25-1.35	0.60-2.00	0.18-0.22	0.0-2.9	0.5-1.0	.43	.43			
HB:														
Harney-------	0-10	24	51	22-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	10-28	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	---	.43	.43			
	28-60	20	50	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
He:														
Harney-------	0-11	24	51	22-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	11-27	7	54	35-42	1.35-1.50	0.20-0.60	0.12-0.19	3.0-5.9	---	.43	.43			
	27-60	20	50	24-35	1.20-1.35	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
Mento--------	0-8	26	53	15-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.37	.37	3	6	48
	8-22	8	52	35-45	1.35-1.45	0.06-0.20	0.12-0.18	6.0-8.9	---	.37	.37			
	22-46	22	50	21-35	1.30-1.40	0.20-0.60	0.18-0.20	3.0-5.9	---	.37	.37			
	46-60	35	33	28-35	1.35-1.45	0.20-0.60	0.10-0.18	3.0-5.9	---	.37	.49			
Hg:														
Heizer-------	0-6	42	37	15-27	1.30-1.45	0.60-2.00	0.10-0.16	0.0-2.9	1.0-2.0	.20	.55	1	8	0
	6-15	42	37	15-27	1.35-1.50	0.60-2.00	0.06-0.13	0.0-2.9	0.5-1.0	.24	.64			
	>15			---	---	---	---	---	---	---	---			
Brownell-----	0-9	42	37	15-27	1.30-1.45	0.60-2.00	0.10-0.16	0.0-2.9	1.0-2.0	.20	.55	2	8	0
	9-24	42	37	15-27	1.35-1.50	0.60-2.00	0.06-0.13	0.0-2.9	0.5-1.0	.20	.64			
	>24			---	---	---	---	---	---	---	---			

PHYSICAL PROPERTIES OF THE SOILS--Continued
Trego County, Kansas: Published

(Single entries under "Sand and Silt" are a representative percentage are calculated using an algorithm. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										K	Kf	T		
	In	Pct	Pct	Pct	g/cc	in/hr	In/in	Pct	Pct					
Hm:														
Holdrege-----	0-11	11	69	15-25	1.40-1.50	0.60-2.00	0.22-0.24	3.0-5.9	1.0-3.0	.32	.32	5	6	48
	11-33	7	62	28-35	1.25-1.35	0.60-2.00	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43			
	33-48	9	67	18-30	1.35-1.45	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.43	.43			
	48-66	14	69	15-20	1.40-1.50	0.60-2.00	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
Ho:														
Hord---------	0-13	11	67	17-27	1.30-1.40	0.60-2.00	0.20-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	13-36	7	65	20-35	1.35-1.45	0.60-2.00	0.17-0.22	0.0-2.9	---	.32	.32			
	36-60	9	67	18-30	1.30-1.50	0.60-2.00	0.17-0.22	0.0-2.9	---	.43	.43			
Hu:														
Humbarger----	0-28	42	38	14-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.28	.28	5	4L	86
	28-33	38	36	16-35	1.40-1.50	0.60-2.00	0.18-0.20	3.0-5.9	---	.28	.28			
	33-60	41	37	12-32	1.40-1.50	0.60-2.00	0.13-0.20	0.0-2.9	---	.28	.28			
Hw:														
Humbarger----	0-21	42	38	14-27	1.30-1.40	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.28	.28	5	4L	86
	21-31	36	39	16-35	1.40-1.50	0.60-2.00	0.18-0.20	3.0-5.9	---	.28	.28			
	31-60	41	37	12-32	1.40-1.50	0.60-2.00	0.13-0.20	0.0-2.9	---	.28	.28			
If:														
Inavale------	0-6	85	9	2-10	1.50-1.60	5.95-19.98	0.10-0.12	0.0-2.9	0.5-1.0	.17	.17	5	2	134
	6-60	92	2	3-10	1.50-1.60	5.95-19.98	0.05-0.11	0.0-2.9	0.5-0.5	.17	.17			
Mc:														
Mccook-------	0-14	14	69	15-20	1.20-1.40	0.60-2.00	0.20-0.24	0.0-2.9	2.0-4.0	.32	.32	5	4L	86
	14-60	14	72	10-18	1.30-1.45	0.60-2.00	0.17-0.20	0.0-2.9	---	.43	.43			
MD:														
Mccook-------	0-11	14	69	15-20	1.20-1.40	0.60-2.00	0.20-0.24	0.0-2.9	2.0-4.0	.32	.32	5	4L	86
	11-60	14	72	10-18	1.30-1.45	0.60-2.00	0.17-0.20	0.0-2.9	---	.43	.43			
Mu:														
Munjor-------	0-6	66	23	7-15	1.30-1.40	2.00-6.00	0.14-0.20	0.0-2.9	0.5-1.0	.24	.24	4	3	86
	6-46	63	26	7-15	1.30-1.40	2.00-6.00	0.13-0.18	0.0-2.9	---	.24	.24			
	46-60	62	35	1-5	1.40-1.50	5.95-19.98	0.06-0.09	0.0-2.9	---	.15	.15			
Pf:														
Penden-------	0-10	35	33	28-35	1.30-1.45	0.60-2.00	0.17-0.22	3.0-5.9	1.0-4.0	.28	.28	5	4L	86
	10-33	36	34	24-35	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.32	.32			
	33-60	36	34	24-35	1.30-1.50	0.60-2.00	0.14-0.19	3.0-5.9	---	.32	.32			
Pk:														
Penden-------	0-5	35	33	28-35	1.30-1.45	0.60-2.00	0.17-0.22	3.0-5.9	1.0-4.0	.28	.28	5	4L	86
	5-30	36	34	24-35	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	---	.32	.32			
	30-60	36	34	24-35	1.30-1.50	0.60-2.00	0.14-0.19	3.0-5.9	---	.32	.32			
Po:														
Penden-------	0-14	39	37	20-27	1.30-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-4.0	.28	.28	5	4L	86
	14-32	36	34	24-35	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	32-60	36	34	24-35	1.30-1.50	0.60-2.00	0.14-0.19	3.0-5.9	0.1-0.5	.32	.32			
Rf:														
Roxbury------	0-29	10	68	18-27	1.30-1.45	0.60-2.00	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	4L	86
	29-40	9	64	18-35	1.35-1.50	0.60-2.00	0.17-0.22	3.0-5.9	1.0-3.0	.43	.43			
	40-60	9	64	18-35	1.35-1.50	0.60-2.00	0.17-0.22	3.0-5.9	0.5-0.5	.43	.43			
Ub:														
Uly----------	0-8	11	67	17-27	1.20-1.30	0.60-2.00	0.22-0.24	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	8-55	9	66	20-30	1.20-1.30	0.60-2.00	0.18-0.22	0.0-2.9	0.7-1.5	.43	.43			
	55-60	10	68	18-27	1.10-1.20	0.60-2.00	0.17-0.22	0.0-2.9	0.4-0.7	.43	.43			
Uc:														
Uly----------	0-8	11	67	17-27	1.20-1.30	0.60-2.00	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	8-22	9	66	20-30	1.20-1.30	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
	22-60	10	68	18-27	1.10-1.20	0.60-2.00	0.18-0.22	0.0-2.9	---	.43	.43			
Vo:														
Voda---------	0-7	19	48	27-40	1.40-1.50	0.60-2.00	0.18-0.20	3.0-5.9	1.0-3.0	.32	.32	5	4L	86
	7-24	5	45	40-60	1.30-1.45	0.06-0.20	0.09-0.13	6.0-8.9	---	.32	.32			
	24-60	30	54	12-20	1.30-1.50	0.60-2.00	0.18-0.24	0.0-2.9	---	.32	.32			
W:														
Water--------	---			---	---	---	---	---	---	---	---	-	---	---
Wb:														
Wakeen-------	0-10	10	68	18-27	1.30-1.45	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	10-31	7	66	18-35	1.35-1.50	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.43	.49			
	>31			---	---	---	---	---	---	---	---			
Wp:														
Wakeen-------	0-4	10	68	18-27	1.30-1.45	0.60-2.00	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	3	4L	86
	4-33	7	66	18-35	1.35-1.50	0.60-2.00	0.18-0.22	3.0-5.9	0.5-1.0	.43	.49			
	>33			---	---	---	---	---	---	---	---			

CHEMICAL PROPERTIES OF THE SOILS
Trego County, Kansas

The Chemical Properties table shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils. Depth to the upper and lower boundaries of each layer is indicated.

Cation−exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation−exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation−exchange capacity. Soils having a high cation−exchange capacity can retain cations. The ability to retain cations helps to prevent the pollution of ground water.

Effective cation−exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium−N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water and can be dissolved and removed by water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one−half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

CHEMICAL PROPERTIES OF THE SOILS--Continued
Trego County, Kansas

Map symbol and soil name	Depth	Cation-exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
051AO:								
Armo----------	0-5	7.0-18	---	6.6-8.4	0-5	---	---	---
	5-23	7.0-21	---	7.4-8.4	0-5	---	---	---
	23-41	7.0-21	---	7.9-8.4	5-10	---	---	---
	41-51	7.0-18	---	7.9-8.4	5-10	---	---	---
	51-60	4.0-15	---	7.9-8.4	5-10	---	---	---
051BG:								
Bogue----------	0-6	20-46	---	6.6-8.4	0-5	---	---	---
	6-17	24-48	---	6.6-8.4	---	---	---	---
	17-23	24-48	24-48	4.5-6.0	---	---	---	---
	23-32	24-48	0.0-0.0	3.5-6.0	---	---	---	---
	>32	---	0.0-0.0	---	---	---	---	---
051CC:								
Campus----------	0-9	6.0-18	---	7.4-8.4	0-10	---	---	---
	9-19	7.0-21	---	7.4-8.4	10-25	---	---	---
	19-33	7.0-21	---	7.9-8.4	15-45	---	---	---
	>33	---	0.0-0.0	---	---	---	---	---
Carlson----------	0-8	6.0-18	---	6.1-7.8	---	---	---	---
	8-18	14-27	---	6.6-8.4	---	---	---	---
	18-60	7.0-21	---	7.9-8.4	0-15	---	---	---
051CD:								
Campus----------	0-9	6.0-18	---	7.4-8.4	0-10	---	---	---
	9-19	7.0-21	---	7.4-8.4	10-25	---	---	---
	19-33	7.0-21	---	7.9-8.4	15-45	---	---	---
	>33	---	0.0-0.0	---	---	---	---	---
Penden----------	0-14	11-24	---	7.4-8.4	0-5	---	---	---
	14-27	9.0-21	---	7.9-8.4	15-30	---	---	---
	27-64	9.0-21	---	7.9-8.4	0-10	---	---	---
051EG:								
Eltree----------	0-26	5.0-18	---	6.6-8.4	0-5	---	---	---
	26-35	7.0-16	---	7.4-8.4	5-15	---	---	---
	35-63	7.0-21	---	7.4-8.4	5-15	---	---	---
051HC:								
Harney----------	0-6	9.0-19	---	5.6-7.8	0	0	0	0
	6-40	14-25	---	6.1-8.4	0-2	0	0	0
	40-74	9.0-21	---	7.4-8.4	0-10	0	0	0
051HD:								
Harney----------	0-6	12-24	---	5.6-7.8	0	0	0	0
	6-40	14-25	---	6.1-8.4	0-2	0	0	0
	40-74	9.0-21	---	7.4-8.4	0-10	0	0	0
051HE:								
Harney----------	0-6	9.0-19	---	5.6-7.8	0	0	0	0
	6-40	14-25	---	6.1-8.4	0-2	0	0	0
	40-74	9.0-21	---	7.4-8.4	0-10	0	0	0
Armo----------	0-5	7.0-18	---	6.6-8.4	0-5	---	---	---
	5-23	7.0-21	---	7.4-8.4	0-5	---	---	---
	23-41	7.0-21	---	7.9-8.4	5-10	---	---	---
	41-51	7.0-18	---	7.9-8.4	5-10	---	---	---
	51-60	4.0-15	---	7.9-8.4	5-10	---	---	---
051HK:								
Harney----------	0-6	9.0-19	---	5.6-7.8	0	0	0	0
	6-40	14-25	---	6.1-8.4	0-2	0	0	0
	40-74	9.0-21	---	7.4-8.4	0-10	0	0	0
Wakeen----------	0-5	7.0-18	---	7.4-8.4	10-20	---	---	---
	5-36	7.0-22	---	7.4-9.0	25-40	---	---	---
	>36	---	0.0-0.0	---	---	---	---	---
051HL:								
Heizer----------	0-6	6.0-16	---	7.4-8.4	10-25	0	0	0
	6-14	6.0-16	---	7.4-8.4	30-65	0	0	0
	>14	---	0.0-0.0	---	---	---	---	---
Armo----------	0-15	7.0-18	---	6.6-8.4	0-5	---	---	---
	15-28	7.0-21	---	7.4-8.4	0-5	---	---	---
	28-41	7.0-21	---	7.9-8.4	5-10	---	---	---
	41-51	7.0-18	---	7.9-8.4	5-10	---	---	---
	51-60	4.0-15	---	7.9-8.4	5-10	---	---	---
051MO:								
Mento----------	0-6	11-23	---	6.6-7.8	---	---	0.0-2.0	---
	6-20	14-27	---	7.4-8.4	---	---	0.0-2.0	---
	20-48	8.0-21	---	7.9-8.4	0-10	---	0.0-4.0	---
	48-67	---	0.0-0.0	---	---	---	---	---
	67-71	---	---	---	---	---	---	---
051WH:								
Wakeen----------	0-11	7.0-18	---	7.4-8.4	10-20	---	---	---
	11-30	7.0-22	---	7.4-9.0	25-40	---	---	---
	>30	---	0.0-0.0	---	---	---	---	---
063BR:								
Bridgeport------	0-13	6.0-19	---	6.6-8.4	0-5	0	0	0
	13-60	7.0-18	---	7.4-8.4	5-10	0	0	0
063EB:								
Elkader----------	0-9	6.0-18	---	7.4-8.4	5-15	---	---	---
	9-20	7.0-21	---	7.9-8.4	10-25	---	---	---
	20-60	7.0-21	---	7.9-9.0	15-50	---	2.0-16.0	---

CHEMICAL PROPERTIES OF THE SOILS--Continued
Trego County, Kansas

Map symbol and soil name	Depth	Cation-exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
063EC:								
Elkader----------	0-9	6.0-18	---	7.4-8.4	5-15	---	---	---
	9-20	7.0-21	---	7.9-8.4	10-25	---	---	---
	20-60	7.0-21	---	7.9-9.0	15-50	---	2.0-16.0	---
063ED:								
Elkader----------	0-9	6.0-18	---	7.4-8.4	5-15	---	---	---
	9-20	7.0-21	---	7.9-8.4	10-25	---	---	---
	20-60	7.0-21	---	7.9-9.0	15-50	---	2.0-16.0	---
Manvel-----------	0-3	6.0-18	---	7.9-8.4	0-10	0	0.0-2.0	0
	3-60	7.0-21	---	7.9-8.4	10-20	---	2.0-4.0	---
063KP:								
Kim---------------	0-5	11-22	---	7.4-8.4	0-5	---	0	---
	5-60	8.0-21	---	7.9-8.4	5-15	---	0.0-4.0	---
Penden-----------	0-10	11-24	---	7.4-8.4	0-5	---	0.0-2.0	0
	10-28	9.0-21	---	7.9-8.4	15-30	---	0.0-2.0	0
	28-60	9.0-21	---	7.9-8.4	0-10	---	0.0-2.0	0
063MA:								
Manvel-----------	0-3	6.0-18	---	7.9-8.4	0-10	0	0.0-2.0	0
	3-60	7.0-21	---	7.9-8.4	10-20	---	2.0-4.0	---
063MB:								
Manvel-----------	0-3	6.0-18	---	7.9-8.4	0-10	0	0.0-2.0	0
	3-60	7.0-21	---	7.9-8.4	10-20	---	2.0-4.0	---
Badland----------	0-1	---	---	---	---	---	---	---
063MC:								
Munjor-----------	0-11	3.0-10	---	7.4-8.4	0-10	---	---	---
	11-36	2.0-9.0	---	7.4-8.4	5-10	---	---	---
	36-60	0.0-3.0	---	7.4-8.4	5-10	---	---	---
Bridgeport------	0-13	2.0-11	---	6.6-8.4	0-5	0	0	0
	13-60	7.0-18	---	7.4-8.4	5-10	0	0	0
063MD:								
Munjor-----------	0-11	3.0-10	---	7.4-8.4	0-10	---	---	---
	11-36	2.0-9.0	---	7.4-8.4	5-10	---	---	---
	36-60	0.0-3.0	---	7.4-8.4	5-10	---	---	---
Inavale----------	0-7	1.0-7.0	---	5.6-7.8	0	0	0	0
	7-18	1.0-6.0	---	5.6-7.8	0	0	0	0
	18-60	1.0-6.0	---	6.6-8.4	0-5	0	0	0
063OT:								
Otero------------	0-6	4.0-13	---	7.4-8.4	0-15	0	0.0-2.0	0
	6-60	2.0-11	---	7.4-8.4	0-15	0	0.0-4.0	0
063UB:								
Ulysses----------	0-7	4.0-18	---	6.6-7.8	---	---	---	---
	7-25	8.0-19	---	7.4-8.4	0-15	---	---	---
	25-60	7.0-16	---	7.9-8.4	0-15	---	---	---
063UC:								
Ulysses----------	0-6	4.0-18	---	6.6-7.8	---	---	---	---
	6-16	8.0-19	---	7.4-8.4	5-10	---	---	---
	16-60	7.0-16	---	7.9-8.4	10-15	---	---	---
065PH:								
Penden-----------	0-7	8.0-19	---	7.4-8.4	0-5	---	---	---
	7-27	9.0-21	---	7.9-8.4	15-30	---	---	---
	27-60	9.0-21	---	7.9-8.4	0-10	---	---	---
065PO:								
Penden-----------	0-7	8.0-19	---	7.4-8.4	0-5	---	---	---
	7-27	9.0-21	---	7.9-8.4	15-35	---	---	---
	27-60	9.0-21	---	7.9-8.4	0-10	---	---	---
Uly---------------	0-12	7.0-18	---	6.1-7.8	0	0	0	0
	12-28	8.0-18	---	6.1-8.4	0	0	0	0
	28-60	7.0-16	---	7.4-8.4	0-10	0	0	0
065UD:								
Uly---------------	0-12	7.0-18	---	6.1-7.8	0	0	0	0
	12-28	8.0-18	---	6.1-8.4	0	0	0	0
	28-60	7.0-16	---	7.4-8.4	0-10	0	0	0
065WS:								
Wakeen-----------	0-12	7.0-18	---	7.4-8.4	10-20	---	---	---
	12-33	7.0-22	---	7.4-9.0	25-40	---	---	---
	>33	---	0.0-0.0	---	---	---	---	---
Nibson-----------	0-6	6.0-18	---	7.4-9.0	10-20	0	0	0
	6-14	7.0-22	---	7.9-9.0	25-40	0	0	0
	>14	---	0.0-0.0	---	---	---	---	---
135CC:								
Campus-----------	0-7	6.0-17	---	7.4-8.4	5-10	---	---	---
	7-15	7.0-21	---	7.4-8.4	10-15	---	---	---
	15-28	7.0-21	---	7.9-8.4	15-30	---	---	---
	>28	---	0.0-0.0	---	---	---	---	---
Canlon-----------	0-4	4.0-16	---	7.4-8.4	5-10	0	0	0
	4-14	3.0-16	---	7.4-8.4	5-25	0	0	0
	>14	---	0.0-0.0	---	---	---	---	---
135RS:								
Roxbury----------	0-21	7.0-18	---	6.6-8.4	1-5	---	---	---
	21-60	7.0-21	---	7.4-8.4	1-5	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued
Trego County, Kansas

Map symbol and soil name	Depth	Cation-exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
135UE:								
Uly----------	0-8	7.0-18	---	6.1-7.8	0	0	0	0
	8-55	8.0-18	---	6.1-8.4	1-5	0	0	0
	55-60	7.0-16	---	7.4-8.4	5-10	0	0	0
Coly----------	0-3	7.0-15	---	7.4-8.4	5-10	0	0	0
	3-60	7.0-14	---	7.4-8.4	10-15	0	0	0
AED:								
Arents, Earthen Dam----------	---	---	---	---	---	---	---	---
Ap:								
Armo----------	0-17	7.0-18	---	6.6-8.4	0-5	---	---	---
	17-30	7.0-21	---	7.4-8.4	0-5	---	---	---
	30-41	7.0-21	---	7.9-8.4	5-10	---	---	---
	41-51	7.0-18	---	7.9-8.4	5-10	---	---	---
	51-60	4.0-15	---	7.9-8.4	5-10	---	---	---
Ar:								
Armo----------	0-19	7.0-18	---	6.6-8.4	0-5	---	---	---
	19-37	7.0-21	---	7.4-8.4	5-10	---	---	---
	37-60	7.0-21	---	7.9-8.4	5-10	---	---	---
As:								
Armo----------	0-16	7.0-18	---	6.6-8.4	0-5	---	---	---
	16-38	7.0-21	---	7.4-8.4	5-10	---	---	---
	38-60	7.0-21	---	7.9-8.4	5-10	---	---	---
Bd:								
Badland----------	0-1	---	---	---	---	---	---	---
Manvel----------	0-3	6.0-18	---	7.9-8.4	0-10	0	0.0-2.0	0
	3-60	7.0-21	---	7.9-8.4	10-20	---	2.0-4.0	---
Bg:								
Bogue----------	0-6	20-46	---	6.6-8.4	0-5	---	---	---
	6-19	24-48	---	6.6-8.4	---	---	---	---
	19-27	---	24-48	4.0-6.5	---	---	---	---
	>27	---	0.0-0.0	---	---	---	---	---
Br:								
Brownell--------	0-8	6.0-18	---	7.4-8.4	10-25	0	0	0
	8-28	6.0-16	---	7.4-8.4	30-65	0	0	0
	>28	---	0.0-0.0	---	---	---	---	---
Cc:								
Campus----------	0-7	6.0-18	---	7.4-8.4	0-10	---	---	---
	7-14	7.0-21	---	7.4-8.4	10-25	---	---	---
	14-36	7.0-21	---	7.9-8.4	15-45	---	---	---
	>36	---	0.0-0.0	---	---	---	---	---
Canlon----------	0-8	5.0-18	---	7.4-8.4	5-10	0	0	0
	8-18	3.0-16	---	7.4-8.4	10-25	0	0	0
	>18	---	0.0-0.0	---	---	---	---	---
Cf:								
Carlson----------	0-4	6.0-18	---	6.1-7.8	---	---	---	---
	4-24	14-27	---	6.6-8.4	---	---	---	---
	24-60	7.0-21	---	7.9-8.4	0-15	---	---	---
Cu:								
Coly----------	0-4	7.0-16	---	7.4-8.4	0-5	0	0	0
	4-60	7.0-14	---	7.4-8.4	5-10	0	0	0
Do:								
Dorrance--------	0-11	4.0-14	---	6.6-8.4	0-10	0	0	0
	11-16	2.0-11	---	7.4-8.4	10-15	0	0	0
	16-60	0.0-4.0	---	7.4-8.4	10-15	0	0	0
EF:								
Eltree----------	0-9	5.0-18	---	6.6-8.4	0-5	---	---	---
	9-25	7.0-16	---	7.4-8.4	5-15	---	---	---
	25-60	7.0-21	---	7.4-8.4	5-15	---	---	---
Ha:								
Harney----------	0-5	9.0-21	---	5.6-7.8	0	0	0	0
	5-33	18-35	---	6.1-8.4	1-5	0	0	0
	33-60	15-30	---	7.4-8.4	3-10	0	0	0
HB:								
Harney----------	0-10	9.0-19	---	5.6-7.8	0	0	0	0
	10-28	14-25	---	6.1-8.4	0-2	0	0	0
	28-60	9.0-21	---	7.4-8.4	0-10	0	0	0
He:								
Harney----------	0-11	9.0-19	---	5.6-7.8	0	0	0	0
	11-27	14-25	---	6.1-8.4	0-2	0	0	0
	27-60	9.0-21	---	7.4-8.4	0-10	0	0	0
Mento----------	0-8	6.0-18	---	6.6-7.8	---	---	0.0-2.0	---
	8-22	14-27	---	7.4-8.4	---	---	0.0-2.0	---
	22-46	8.0-21	---	7.9-8.4	---	---	0.0-4.0	---
	46-60	11-21	---	7.9-8.4	0-10	---	2.0-8.0	---
Hg:								
Heizer----------	0-6	6.0-18	---	7.4-8.4	10-25	0	0	0
	6-15	6.0-16	---	7.4-8.4	30-65	0	0	0
	>15	---	0.0-0.0	---	---	---	---	---
Brownell--------	0-9	6.0-18	---	7.4-8.4	10-25	0	0	0
	9-24	6.0-16	---	7.4-8.4	30-65	0	0	0
	>24	---	0.0-0.0	---	---	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued
Trego County, Kansas

Map symbol and soil name	Depth	Cation-exchange capacity	Effective Cation Exchange Capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	In	meq/100g	pH	Pct	Pct	mmhos/cm		
Hm:								
Holdrege--------	0-11	6.0-17	---	5.6-7.3	0	0	0	0
	11-33	11-21	---	6.6-7.8	1-5	0	0	0
	33-48	7.0-18	---	6.6-7.8	1-5	0	0	0
	48-66	6.0-12	---	7.4-8.4	1-5	0	0	0
Ho:								
Hord----------	0-13	7.0-19	---	5.6-7.3	0	0	0	0
	13-36	8.0-21	---	6.1-7.8	0	0	0	0
	36-60	7.0-18	---	7.4-8.4	0-5	0	0	0
Hu:								
Humbarger-------	0-28	6.0-18	---	7.4-8.4	0-5	---	---	---
	28-33	6.0-21	---	7.9-8.4	0-5	---	---	---
	33-60	4.0-19	---	7.9-8.4	0-5	---	---	---
Hw:								
Humbarger-------	0-21	6.0-18	---	7.4-8.4	0-5	---	---	---
	21-31	6.0-21	---	7.9-8.4	0-5	---	---	---
	31-60	4.0-19	---	7.9-8.4	0-5	---	---	---
If:								
Inavale---------	0-6	1.0-7.0	---	5.6-7.8	0	0	0	0
	6-60	1.0-6.0	---	6.6-8.4	0-5	0	0	0
Mc:								
Mccook----------	0-14	6.0-15	---	7.4-8.4	0-5	---	---	---
	14-60	4.0-11	---	7.4-8.4	0-10	0	0	0
MD:								
Mccook----------	0-11	6.0-15	---	7.4-8.4	0-5	0	0	0
	11-60	4.0-11	---	7.4-8.4	0-10	0	0	0
Mu:								
Munjor----------	0-6	3.0-10	---	7.4-8.4	0-10	---	---	---
	6-46	2.0-9.0	---	7.4-8.4	5-10	---	---	---
	46-60	0.0-3.0	---	7.4-8.4	5-10	---	---	---
Pf:								
Penden----------	0-10	11-24	---	7.4-8.4	0-5	---	---	---
	10-33	9.0-21	---	7.9-8.4	15-30	---	---	---
	33-60	9.0-21	---	7.9-8.4	0-10	---	---	---
Pk:								
Penden----------	0-5	11-24	---	7.4-8.4	0-5	---	---	---
	5-30	9.0-21	---	7.9-8.4	15-30	---	---	---
	30-60	9.0-21	---	7.9-8.4	0-10	---	---	---
Po:								
Penden----------	0-14	8.0-19	---	7.4-8.4	0-5	---	0.0-2.0	0
	14-32	9.0-21	---	7.9-8.4	15-30	---	0.0-2.0	0
	32-60	9.0-21	---	7.9-8.4	0-10	---	0.0-2.0	0
Rf:								
Roxbury---------	0-29	8.0-19	---	7.4-8.4	1-5	---	---	---
	29-40	7.0-23	---	7.4-8.4	1-5	---	---	---
	40-60	7.0-21	---	7.4-8.4	5-10	---	---	---
Ub:								
Uly---------	0-8	10-25	---	6.1-7.8	0	0	0	0
	8-55	10-25	---	6.1-8.4	1-5	0	0	0
	55-60	10-23	---	7.4-8.4	5-10	0	0	0
Uc:								
Uly---------	0-8	7.0-18	---	6.1-7.8	0	0	0	0
	8-22	8.0-18	---	6.1-8.4	0	0	0	0
	22-60	7.0-16	---	7.4-8.4	0-10	0	0	0
Vo:								
Voda----------	0-7	11-26	---	7.4-8.4	0-30	---	---	---
	7-24	16-36	---	7.4-8.4	---	---	---	---
	24-60	4.0-12	---	7.4-8.4	---	---	---	---
W:								
Water-----------	---	---	---	---	---	---	---	---
Wb:								
Wakeen----------	0-10	7.0-18	---	7.4-8.4	10-20	---	---	---
	10-31	7.0-22	---	7.4-9.0	25-40	---	---	---
	>31	---	0.0-0.0	---	---	---	---	---
Wp:								
Wakeen----------	0-4	7.0-18	---	7.4-8.4	10-20	---	---	---
	4-33	7.0-22	---	7.4-9.0	25-40	---	---	---
	>33	---	0.0-0.0	---	---	---	---	---

WATER FEATURES
Trego County, Kansas

The Water Features table gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations. Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long–duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink–swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The months in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The Water Features table indicates, by month, depth to the top (upper limit) and base (lower limit) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table. Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The Water Features table indicates surface water depth and the duration and frequency of ponding. Duration is expressed as very brief if less than 2 days, brief if 2 to 7 days, long if 7 to 30 days, and very long if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. None means that ponding is not probable; rare that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); occasional that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and frequent that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and frequency are estimated. Duration is expressed as extremely brief if 0.1 hour to 4 hours, very brief if 4 hours to 2 days, brief if 2 to 7 days, long if 7 to 30 days, and very long if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. None means that flooding is not probable; very rare that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); rare that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); occasional that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); frequent that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and very frequent that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood–prone areas at specific flood frequency levels.

WATER FEATURES--Continued
Trego County, Kansas

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
051AO:									
Armo	B		---	---	---	---	---	---	---
051BG:									
Bogue	D		---	---	---	---	---	---	---
051CC:									
Campus	B		---	---	---	---	---	---	---
Carlson	B		---	---	---	---	---	---	---
051CD:									
Campus	B		---	---	---	---	---	---	---
Penden	B		---	---	---	---	---	---	---
051EG:									
Eltree	B		---	---	---	---	---	---	---
051HC:									
Harney	B		---	---	---	---	---	---	---
051HD:									
Harney	B		---	---	---	---	---	---	---
051HE:									
Armo	B		---	---	---	---	---	---	---
Harney	B		---	---	---	---	---	---	---
051HK:									
Harney	B		---	---	---	---	---	---	---
Wakeen	B		---	---	---	---	---	---	---
051HL:									
Armo	B		---	---	---	---	---	---	---
Heizer	D		---	---	---	---	---	---	---
051MO:									
Mento	C		---	---	---	---	---	---	---
051WH:									
Wakeen	B		---	---	---	---	---	---	---
063BR:									
Bridgeport	B								
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
063EB:									
Elkader	B		---	---	---	---	---	---	---
063EC:									
Elkader	B		---	---	---	---	---	---	---
063ED:									
Elkader	B		---	---	---	---	---	---	---
Manvel	B		---	---	---	---	---	---	---
063KP:									
Kim	B		---	---	---	---	---	---	---
Penden	B		---	---	---	---	---	---	---
063MA:									
Manvel	B		---	---	---	---	---	---	---
063MB:									
Manvel	B		---	---	---	---	---	---	---
Badland	---		---	---	---	---	---	---	---
063MC:									

WATER FEATURES--Continued
Trego County, Kansas

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Munjor	B								
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
Bridgeport	B								
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
063MD:									
Munjor	B								
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
Inavale	A								
		January	---	---	---	---	---	Very brief	Occasional
		February	---	---	---	---	---	Very brief	Occasional
		March	---	---	---	---	---	Very brief	Occasional
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
063OT:									
Otero	B		---	---	---	---	---	---	---
063UB:									
Ulysses	B		---	---	---	---	---	---	---
063UC:									
Ulysses	B		---	---	---	---	---	---	---
065PH:									
Penden	B		---	---	---	---	---	---	---
065PO:									
Penden	B		---	---	---	---	---	---	---
Uly	B		---	---	---	---	---	---	---
065UD:									
Uly	B		---	---	---	---	---	---	---
065WS:									
Wakeen	B		---	---	---	---	---	---	---
Nibson	D		---	---	---	---	---	---	---
135CC:									
Campus	B		---	---	---	---	---	---	---
Canlon	D		---	---	---	---	---	---	---
135RS:									
Roxbury	B								
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
135UE:									
Uly	B		---	---	---	---	---	---	---
Coly	B		---	---	---	---	---	---	---
Ap:									
Armo	B		---	---	---	---	---	---	---
Ar:									
Armo	B		---	---	---	---	---	---	---
As:									
Armo	B		---	---	---	---	---	---	---
Bd:									
Badland	---								

WATER FEATURES--Continued
Trego County, Kansas

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
			---	---	---	---	---	---	---
Manvel	B		---	---	---	---	---	---	---
Bg:									
Bogue	D		---	---	---	---	---	---	---
Br:									
Brownell	B		---	---	---	---	---	---	---
Cc:									
Campus	B		---	---	---	---	---	---	---
Canlon	D		---	---	---	---	---	---	---
Cf:									
Carlson	B		---	---	---	---	---	---	---
Cu:									
Coly	B		---	---	---	---	---	---	---
Do:									
Dorrance	A		---	---	---	---	---	---	---
EF:									
Eltree	B		---	---	---	---	---	---	---
Ha:									
Harney	B		---	---	---	---	---	---	---
HB:									
Harney	B		---	---	---	---	---	---	---
He:									
Harney	B		---	---	---	---	---	---	---
Mento	C		---	---	---	---	---	---	---
Hg:									
Heizer	D		---	---	---	---	---	---	---
Brownell	B		---	---	---	---	---	---	---
Hm:									
Holdrege	B		---	---	---	---	---	---	---
Ho:									
Hord	B								
		March	---	---	---	---	---	Very brief	Rare
		April	---	---	---	---	---	Very brief	Rare
		May	---	---	---	---	---	Very brief	Rare
		June	---	---	---	---	---	Very brief	Rare
		July	---	---	---	---	---	Very brief	Rare
		August	---	---	---	---	---	Very brief	Rare
		September	---	---	---	---	---	Very brief	Rare
		October	---	---	---	---	---	Very brief	Rare
Hu:									
Humbarger	B								
		April	---	---	---	---	---	Very brief	Frequent
		May	---	---	---	---	---	Very brief	Frequent
		June	---	---	---	---	---	Very brief	Frequent
		July	---	---	---	---	---	Very brief	Frequent
		August	---	---	---	---	---	Very brief	Frequent
		September	---	---	---	---	---	Very brief	Frequent
Hw:									
Humbarger	B								
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
If:									
Inavale	A								
		January	---	---	---	---	---	Very brief	Frequent
		February	---	---	---	---	---	Very brief	Frequent
		March	---	---	---	---	---	Very brief	Frequent
		April	---	---	---	---	---	Very brief	Frequent
		May	---	---	---	---	---	Very brief	Frequent
		June	---	---	---	---	---	Very brief	Frequent
		July	---	---	---	---	---	Very brief	Frequent
Mc:									

WATER FEATURES--Continued
Trego County, Kansas

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Month	Soil Saturation		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Mccook	B								
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
MD:									
Mccook	B								
		March	---	---	---	---	---	Very brief	Rare
		April	---	---	---	---	---	Very brief	Rare
		May	---	---	---	---	---	Very brief	Rare
		June	---	---	---	---	---	Very brief	Rare
		July	---	---	---	---	---	Very brief	Rare
		August	---	---	---	---	---	Very brief	Rare
		September	---	---	---	---	---	Very brief	Rare
		October	---	---	---	---	---	Very brief	Rare
Mu:									
Munjor	B								
		April	---	---	---	---	---	Very brief	Occasional
		May	---	---	---	---	---	Very brief	Occasional
		June	---	---	---	---	---	Very brief	Occasional
		July	---	---	---	---	---	Very brief	Occasional
		August	---	---	---	---	---	Very brief	Occasional
		September	---	---	---	---	---	Very brief	Occasional
Pf:									
Penden	B								
			---	---	---	---	---	---	---
Pk:									
Penden	B								
			---	---	---	---	---	---	---
Po:									
Penden	B								
			---	---	---	---	---	---	---
Rf:									
Roxbury	B								
		April	---	---	---	---	---	Very brief	Rare
		May	---	---	---	---	---	Very brief	Rare
		June	---	---	---	---	---	Very brief	Rare
		July	---	---	---	---	---	Very brief	Rare
		August	---	---	---	---	---	Very brief	Rare
		September	---	---	---	---	---	Very brief	Rare
Ub:									
Uly	B								
			---	---	---	---	---	---	---
Uc:									
Uly	B								
			---	---	---	---	---	---	---
Vo:									
Voda	C								
		April	0.5-3.0	>6.0	---	---	---	Long	Occasional
		May	0.5-3.0	>6.0	---	---	---	Long	Occasional
		June	0.5-3.0	>6.0	---	---	---	Long	Occasional
		July	0.5-3.0	>6.0	---	---	---	Long	Occasional
		August	0.5-3.0	>6.0	---	---	---	Long	Occasional
		September	0.5-3.0	>6.0	---	---	---	Long	Occasional
W:									
Water	---								
			---	---	---	---	---	---	---
Wb:									
Wakeen	B								
			---	---	---	---	---	---	---
Wp:									
Wakeen	B								
			---	---	---	---	---	---	---

SOIL FEATURES
Trego County, Kansas

The following table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A restrictive layer is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. Depth to top is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as low, moderate, or high, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as low, moderate, or high. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

SOIL FEATURES--Continued
Trego County, Kansas

Map symbol and soil name	Restrictive layer				Potential for Frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated Steel	Concrete
		In	In				
051AO:							
Armo	---	---	---	---	Low	Low	Low
051BG:							
Bogue	20-40	Bedrock (paralithic)	---	Weakly cemented	Low	High	Moderate
051CC:							
Campus	20-40	Bedrock (lithic)	---	Strongly cemented	Low	Low	Low
Carlson	---	---	---	---	Low	High	Low
051CD:							
Campus	20-40	Bedrock (lithic)	---	Strongly cemented	Low	Low	Low
Penden	---	---	---	---	Low	Moderate	Low
051EG:							
Eltree	---	---	---	---	Moderate	Low	Low
051HC:							
Harney	---	---	---	---	Low	High	Low
051HD:							
Harney	---	---	---	---	Low	High	Low
051HE:							
Armo	---	---	---	---	Low	Low	Low
Harney	---	---	---	---	Low	High	Low
051HK:							
Harney	---	---	---	---	Low	High	Low
Wakeen	20-40	Bedrock (paralithic)	---	Weakly cemented	Low	Moderate	Low
051HL:							
Armo	---	---	---	---	Low	Low	Low
Heizer	10-20	Bedrock (lithic)	---	Very strongly cemented	Moderate	Low	Low
051MO:							
Mento	---	---	---	---	Low	High	Low
051WH:							
Wakeen	20-40	Bedrock (paralithic)	---	Weakly cemented	Low	Moderate	Low
063BR:							
Bridgeport	---	---	---	---	Moderate	Low	Low
063EB:							
Elkader	---	---	---	---	Moderate	Low	Low
063EC:							
Elkader	---	---	---	---	Moderate	Low	Low
063ED:							
Elkader	---	---	---	---	Moderate	Low	Low
Manvel	---	---	---	---	Low	High	Low
063KP:							
Kim	---	---	---	---	Moderate	High	Low
Penden	---	---	---	---	Moderate	Moderate	Low
063MA:							
Manvel	---	---	---	---	Low	High	Low
063MB:							
Manvel	---	---	---	---	Low	High	Low
Badland	0-3	Bedrock (paralithic)	---	Weakly cemented	---	---	---
063MC:							
Munjor	---	---	---	---	Low	Moderate	Low
Bridgeport	---	---	---	---	Moderate	Low	Low
063MD:							
Munjor	---	---	---	---	Low	Moderate	Low
Inavale	---	---	---	---	Low	Moderate	Low
063OT:							
Otero	---	---	---	---	Low	High	Low
063UB:							
Ulysses	---	---	---	---	Moderate	Moderate	Low
063UC:							
Ulysses	---	---	---	---	Moderate	Moderate	Low
065PH:							
Penden	---	---	---	---	Low	Moderate	Low
065PO:							
Penden	---	---	---	---	Low	Moderate	Low
Uly	---	---	---	---	Moderate	High	Low
065UD:							
Uly	---	---	---	---	Moderate	High	Low
065WS:							
Wakeen	20-40	Bedrock (paralithic)	---	Weakly cemented	Low	Moderate	Low
Nibson	10-20	Bedrock (paralithic)	---	Weakly cemented	Low	Low	Low
135CC:							
Campus	20-40	Bedrock (lithic)	---	Strongly cemented	Moderate	Low	Low
Canlon	10-20	Bedrock (lithic)	---	Indurated	Moderate	Low	Low
135RS:							
Roxbury	---	---	---	---	Moderate	Low	Low
135UE:							
Uly	---	---	---	---	Moderate	Moderate	Low
Coly	---	---	---	---	Moderate	Moderate	Low
AED:							
Arents, Earthen Dam	---	---	---	---	---	---	---

SOIL FEATURES--Continued
Trego County, Kansas

Map symbol and soil name	Restrictive layer				Potential for Frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated Steel	Concrete
		In	In				
Ap:							
Armo	---	---	---	---	Low	Low	Low
Ar:							
Armo	---	---	---	---	Low	Low	Low
As:							
Armo	---	---	---	---	Low	Low	Low
Bd:							
Badland	---	---	---	---	---	---	---
Manvel	---	---	---	---	Low	High	Low
Bg:							
Bogue	20-40	Bedrock (paralithic)	---	Weakly cemented	Low	High	Moderate
Br:							
Brownell	20-40	Bedrock (lithic)	---	Strongly cemented	Low	Low	Low
Cc:							
Campus	20-40	Bedrock (lithic)	---	Strongly cemented	Low	Low	Low
Canlon	10-20	Bedrock (lithic)	---	Indurated	Low	Low	Low
Cf:							
Carlson	---	---	---	---	Low	High	Low
Cu:							
Coly	---	---	---	---	Moderate	High	Low
Do:							
Dorrance	---	---	---	---	Low	Low	Low
EF:							
Eltree	---	---	---	---	Moderate	Low	Low
Ha:							
Harney	---	---	---	---	Low	Moderate	Low
HB:							
Harney	---	---	---	---	Low	High	Low
He:							
Harney	---	---	---	---	Low	High	Low
Mento	---	---	---	---	Low	High	Low
Hg:							
Heizer	10-20	Bedrock (lithic)	---	Very strongly cemented	Moderate	Low	Low
Brownell	20-40	Bedrock (lithic)	---	Strongly cemented	Low	Low	Low
Hm:							
Holdrege	---	---	---	---	Low	Low	Low
Ho:							
Hord	---	---	---	---	Moderate	High	Low
Hu:							
Humbarger	---	---	---	---	Moderate	Low	Low
Hw:							
Humbarger	---	---	---	---	Moderate	Low	Low
If:							
Inavale	---	---	---	---	Low	Moderate	Low
Mc:							
Mccook	---	---	---	---	Moderate	Low	Low
MD:							
Mccook	---	---	---	---	Moderate	Low	Low
Mu:							
Munjor	---	---	---	---	Low	Moderate	Low
Pf:							
Penden	---	---	---	---	Low	Moderate	Low
Pk:							
Penden	---	---	---	---	Low	Moderate	Low
Po:							
Penden	---	---	---	---	Moderate	Moderate	Low
Rf:							
Roxbury	---	---	---	---	Moderate	Low	Low
Ub:							
Uly	---	---	---	---	Moderate	High	Low
Uc:							
Uly	---	---	---	---	Moderate	High	Low
Vo:							
Voda	---	---	---	---	Low	High	Low
W:							
Water	---	---	---	---	Low	---	---
Wb:							
Wakeen	20-40	Bedrock (paralithic)	---	Weakly cemented	Low	Moderate	Low
Wp:							
Wakeen	20-40	Bedrock (paralithic)	---	Weakly cemented	Low	Moderate	Low

WATER MANAGEMENT
Trego County, Kansas

The soils of the survey area are rated in the Water Management table according to limitations that affect their suitability for water management. Soils are rated for pond reservoir areas, drainage, irrigation, terraces and diversions, and grassed waterways. Restrictive features that affect each soil for the specified use is also provided in the table.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Moderately limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Limited indicates that the soil has one or more features that are significant limitations for the specified use. The limitations can be overcome, but generally require special design, soil reclamation, or installation procedures that may result in additional expense. Fair performance and moderate to high maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Limitation class terms, such as very limited or limited, etc., limitation ratings, and numerical ratings are shown for each soil feature listed. As many as three soil features may be listed for each soil component if applicable. The overall limitation rating for the soil component is based on the most severe limitation.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorablecompaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects theamount of usable material. It also affects traffic ability.

Aquifer−fed excavated ponds are pits or dugouts that extend to a ground−water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditch banks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a very limited hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, which conduct surface water to outlets at a non−erosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

WATER MANAGEMENT--Continued
Trego County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
051AO:				
Armo	Limitation: deep to water	Limitation: slope	Favorable	Favorable
051BG:				
Bogue	Limitation: deep to water	Limitation: slope slow intake droughty	Limitation: percs slowly depth to rock	Limitation: percs slowly depth to rock droughty
051CC:				
Campus	Limitation: deep to water	Limitation: slope depth to rock	Limitation: depth to rock	Limitation: depth to rock
Carlson	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
051CD:				
Campus	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Penden	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope
051EG:				
Eltree	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
051HC:				
Harney	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
051HD:				
Harney	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
051HE:				
Armo	Limitation: deep to water	Limitation: slope	Favorable	Favorable
Harney	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
051HK:				
Harney	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Wakeen	Limitation: deep to water	Limitation: depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily depth to rock
051HL:				
Armo	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
Heizer	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
051MO:				
Mento	Limitation: deep to water	Limitation: erodes easily percs slowly slope	Limitation: erodes easily	Limitation: erodes easily percs slowly
051WH:				
Wakeen	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily depth to rock
063BR:				
Bridgeport	Limitation: deep to water	Limitation: flooding	Limitation: erodes easily	Limitation: erodes easily
063EB:				
Elkader	Limitation: deep to water	Limitation: excess salt	Limitation: erodes easily	Limitation: erodes easily too arid
063EC:				
Elkader	Limitation: deep to water	Limitation: excess salt slope	Limitation: erodes easily	Limitation: erodes easily too arid
063ED:				
Elkader	Limitation: deep to water	Limitation: excess salt slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Manvel	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
063KP:				
Kim	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope too arid
Penden	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope

WATER MANAGEMENT--Continued
Trego County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
063MA:				
Manvel	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily too arid
063MB:				
Manvel	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily slope	Limitation: erodes easily slope too arid
Badland	---	---	---	---
063MC:				
Munjor	Limitation: deep to water	Limitation: flooding soil blowing	Limitation: soil blowing	Favorable
Bridgeport	Limitation: deep to water	Limitation: flooding soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
063MD:				
Munjor	Limitation: deep to water	Limitation: flooding soil blowing	Limitation: soil blowing	Favorable
Inavale	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
063OT:				
Otero	Limitation: deep to water	Limitation: soil blowing droughty	Limitation: soil blowing	Limitation: too arid droughty
063UB:				
Ulysses	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily too arid
063UC:				
Ulysses	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily too arid
065PH:				
Penden	Limitation: deep to water	Limitation: slope	Favorable	Favorable
065PO:				
Penden	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
Uly	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope
065UD:				
Uly	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope	Limitation: erodes easily slope
065WS:				
Wakeen	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
Nibson	Limitation: deep to water	Limitation: slope depth to rock	Limitation: large stones slope depth to rock	Limitation: erodes easily large stones slope
135CC:				
Campus	Limitation: deep to water	Limitation: slope depth to rock	Limitation: depth to rock	Limitation: depth to rock
Canlon	Limitation: deep to water	Limitation: slope depth to rock	Limitation: depth to rock	Limitation: depth to rock
135RS:				
Roxbury	Limitation: deep to water	Limitation: flooding	Limitation: erodes easily	Limitation: erodes easily
135UE:				
Uly	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Coly	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
AED:				
Arents, Earthen Dam	---	---	---	---
Ap:				
Armo	Limitation: deep to water	Favorable	Favorable	Favorable
Ar:				
Armo	Limitation: deep to water	Limitation: slope	Favorable	Favorable
As:				
Armo	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope

WATER MANAGEMENT--Continued
Trego County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Bd:				
Badland	---	---	---	---
Manvel	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily too arid
Bg:				
Bogue	Limitation: deep to water	Limitation: slope slow intake droughty	Limitation: percs slowly slope depth to rock	Limitation: slope depth to rock droughty
Br:				
Brownell	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones depth to rock	Limitation: large stones depth to rock droughty
Cc:				
Campus	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Canlon	Limitation: deep to water	Limitation: slope depth to rock	Limitation: slope depth to rock	Limitation: slope depth to rock
Cf:				
Carlson	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Cu:				
Coly	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily	Limitation: erodes easily
Do:				
Dorrance	Limitation: deep to water	Limitation: slope soil blowing droughty	Limitation: slope too sandy soil blowing	Limitation: slope droughty
EF:				
Eltree	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Ha:				
Harney	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
HB:				
Harney	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
He:				
Harney	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Mento	Limitation: deep to water	Limitation: erodes easily percs slowly	Limitation: erodes easily	Limitation: erodes easily percs slowly
Hg:				
Heizer	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Brownell	Limitation: deep to water	Limitation: large stones slope droughty	Limitation: large stones slope depth to rock	Limitation: large stones slope droughty
Hm:				
Holdrege	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Ho:				
Hord	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Hu:				
Humbarger	Limitation: deep to water	Limitation: flooding	Favorable	Favorable
Hw:				
Humbarger	Limitation: deep to water	Limitation: flooding	Favorable	Favorable
If:				
Inavale	Limitation: deep to water	Limitation: fast intake soil blowing droughty	Limitation: too sandy soil blowing	Limitation: droughty
Mc:				
Mccook	Limitation: deep to water	Limitation: flooding	Limitation: erodes easily	Limitation: erodes easily
MD:				
Mccook	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Mu:				
Munjor	Limitation: deep to water	Limitation: flooding soil blowing	Limitation: soil blowing	Favorable

WATER MANAGEMENT--Continued
Trego County, Kansas

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Features affecting--			
	Drainage	Irrigation	Terraces and diversions	Grassed waterways
Pf:				
Penden	Limitation: deep to water	Limitation: slope	Favorable	Favorable
Pk:				
Penden	Limitation: deep to water	Limitation: slope	Favorable	Favorable
Po:				
Penden	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
Rf:				
Roxbury	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Ub:				
Uly	Limitation: deep to water	Favorable	Limitation: erodes easily	Limitation: erodes easily
Uc:				
Uly	Limitation: deep to water	Limitation: slope	Limitation: erodes easily	Limitation: erodes easily
Vo:				
Voda	Limitation: flooding percs slowly	Limitation: flooding percs slowly wetness	Limitation: wetness	Limitation: percs slowly wetness
W:				
Water	---	---	---	---
Wb:				
Wakeen	Limitation: deep to water	Limitation: depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily depth to rock
Wp:				
Wakeen	Limitation: deep to water	Limitation: slope depth to rock	Limitation: erodes easily depth to rock	Limitation: erodes easily depth to rock

WATER MANAGEMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer-fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
051AO:							
Armo	100	Very limited Seepage	 1.00	Somewhat limited Piping	 0.90	Very limited Deep to water	 1.00
051BG:							
Bogue	100	Somewhat limited Depth to bedrock	 0.08	Somewhat limited Thin layer Hard to pack	 0.81 0.80	Very limited Deep to water	 1.00
051CC:							
Campus	65	Somewhat limited Depth to bedrock Seepage	 0.77 0.70	Somewhat limited Thin layer Piping	 0.77 0.68	Very limited Deep to water	 1.00
Carlson	35	Somewhat limited Seepage	 0.70	Somewhat limited Piping	 0.58	Very limited Deep to water	 1.00
051CD:							
Campus	55	Somewhat limited Depth to bedrock Seepage	 0.77 0.70	Somewhat limited Thin layer Piping	 0.77 0.68	Very limited Deep to water	 1.00
Penden	45	Somewhat limited Seepage	 0.70	Somewhat limited Piping	 0.08	Very limited Deep to water	 1.00
051EG:							
Eltree	100	Somewhat limited Seepage	 0.70	Somewhat limited Piping	 0.88	Very limited Deep to water	 1.00
051HC:							
Harney	100	Somewhat limited Seepage	 0.70	Somewhat limited Piping	 0.00	Very limited Deep to water	 1.00
051HD:							
Harney	100	Somewhat limited Seepage	 0.70	Somewhat limited Piping	 0.00	Very limited Deep to water	 1.00
051HE:							
Armo	50	Very limited Seepage	 1.00	Somewhat limited Piping	 0.90	Very limited Deep to water	 1.00
Harney	50	Somewhat limited Seepage	 0.70	Somewhat limited Piping	 0.00	Very limited Deep to water	 1.00
051HK:							
Harney	60	Somewhat limited Seepage	 0.70	Somewhat limited Piping	 0.00	Very limited Deep to water	 1.00
Wakeen	40	Somewhat limited Seepage Depth to bedrock	 0.70 0.03	Somewhat limited Thin layer Piping	 0.66 0.50	Very limited Deep to water	 1.00
051HL:							
Armo	50	Very limited Seepage Slope	 1.00 0.00	Somewhat limited Piping	 0.91	Very limited Deep to water	 1.00
Heizer	50	Very limited Seepage Depth to bedrock Slope	 1.00 1.00 0.06	Very limited Thin layer	 1.00	Very limited Deep to water	 1.00
051MO:							
Mento	100	Somewhat limited Seepage	 0.05	Somewhat limited Piping	 0.66	Very limited Deep to water	 1.00
051WH:							
Wakeen	100	Somewhat limited Seepage Depth to bedrock	 0.70 0.11	Somewhat limited Thin layer Piping	 0.86 0.53	Very limited Deep to water	 1.00
063BR:							
Bridgeport	100	Somewhat limited Seepage	 0.70	Somewhat limited Piping	 0.70	Very limited Deep to water	 1.00
063EB:							
Elkader	100	Somewhat limited Seepage	 0.70	Somewhat limited Piping Salinity	 0.76 0.03	Very limited Deep to water	 1.00

WATER MANAGEMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer-fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
063EC:							
Elkader	100	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.76	Deep to water	1.00
				Salinity	0.03		
063ED:							
Elkader	55	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.76	Deep to water	1.00
		Slope	0.00	Salinity	0.03		
Manvel	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.05	Piping	0.88	Deep to water	1.00
063KP:							
Kim	60	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Deep to water	1.00
		Slope	0.00				
Penden	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.08	Deep to water	1.00
		Slope	0.00				
063MA:							
Manvel	100	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.05	Piping	0.88	Deep to water	1.00
063MB:							
Manvel	65	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.05	Piping	0.88	Deep to water	1.00
Badland	35	Very limited		Very limited		Very limited	
		Seepage	1.00	Thin layer	1.00	Deep to water	1.00
		Depth to bedrock	1.00				
		Slope	0.21				
063MC:							
Munjor	60	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Deep to water	1.00
Bridgeport	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.78	Deep to water	1.00
				Seepage	0.08		
063MD:							
Munjor	55	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Deep to water	1.00
Inavale	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.45	Deep to water	1.00
063OT:							
Otero	100	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	Deep to water	1.00
063UB:							
Ulysses	100	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.98	Deep to water	1.00
063UC:							
Ulysses	100	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Deep to water	1.00
065PH:							
Penden	100	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.08	Deep to water	1.00
065PO:							
Penden	65	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.08	Deep to water	1.00
		Slope	0.00				
Uly	35	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Deep to water	1.00
		Slope	0.02				
065UD:							
Uly	100	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Deep to water	1.00

WATER MANAGEMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer-fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
065WS:							
Wakeen	60	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.77	Deep to water	1.00
		Depth to bedrock	0.06	Piping	0.54		
		Slope	0.01				
Nibson	40	Very limited		Very limited		Very limited	
		Seepage	1.00	Thin layer	1.00	Deep to water	1.00
		Depth to bedrock	0.69	Piping	0.50		
		Slope	0.01				
135CC:							
Campus	65	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.91	Thin layer	0.91	Deep to water	1.00
		Seepage	0.70	Piping	0.68		
Canlon	35	Very limited		Very limited		Very limited	
		Seepage	1.00	Thin layer	1.00	Deep to water	1.00
		Depth to bedrock	1.00	Piping	0.92		
135RS:							
Roxbury	100	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.60	Deep to water	1.00
135UE:							
Uly	60	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Deep to water	1.00
Coly	40	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Deep to water	1.00
AED:							
Arents, Earthen Dam-	100	Not rated		Not rated		Not rated	
Ap:							
Armo	100	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.92	Deep to water	1.00
Ar:							
Armo	100	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.66	Deep to water	1.00
As:							
Armo	100	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.64	Deep to water	1.00
		Slope	0.00				
Bd:							
Badland	70	Not rated		Not rated		Not rated	
Manvel	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.05	Piping	0.88	Deep to water	1.00
Bg:							
Bogue	100	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.19	Hard to pack	0.97	Deep to water	1.00
		Slope	0.06	Thin layer	0.93		
Br:							
Brownell	100	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.91	Thin layer	0.91	Deep to water	1.00
		Seepage	0.70				
Cc:							
Campus	70	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.68	Deep to water	1.00
		Depth to bedrock	0.66	Thin layer	0.66		
		Slope	0.00				
Canlon	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Thin layer	1.00	Deep to water	1.00
		Depth to bedrock	1.00	Piping	0.92		
		Slope	0.08				
Cf:							
Carlson	100	Somewhat limited		Somewhat limited		Very limited	

WATER MANAGEMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer-fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
		Seepage	0.70	Piping	0.31	Deep to water	1.00
Cu:							
Coly	100	Somewhat limited Seepage	0.70	Very limited Piping	1.00	Very limited Deep to water	1.00
Do:							
Dorrance	100	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Deep to water	1.00
EF:							
Eltree	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.70	Very limited Deep to water	1.00
Ha:							
Harney	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.00	Very limited Deep to water	1.00
HB:							
Harney	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.04	Very limited Deep to water	1.00
He:							
Harney	70	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.07	Very limited Deep to water	1.00
Mento	30	Somewhat limited Seepage	0.05	Not limited		Very limited Deep to water	1.00
Hg:							
Heizer	60	Very limited Seepage Depth to bedrock Slope	1.00 1.00 0.10	Very limited Thin layer	1.00	Very limited Deep to water	1.00
Brownell	40	Somewhat limited Depth to bedrock Seepage	0.98 0.70	Somewhat limited Thin layer	0.98	Very limited Deep to water	1.00
Hm:							
Holdrege	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.22	Very limited Deep to water	1.00
Ho:							
Hord	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.64	Very limited Deep to water	1.00
Hu:							
Humbarger	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.95	Very limited Deep to water	1.00
Hw:							
Humbarger	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.91	Very limited Deep to water	1.00
If:							
Inavale	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.96	Very limited Deep to water	1.00
Mc:							
Mccook	100	Somewhat limited Seepage	0.70	Very limited Piping	1.00	Very limited Deep to water	1.00
MD:							
Mccook	100	Somewhat limited Seepage	0.70	Very limited Piping	1.00	Very limited Deep to water	1.00
Mu:							
Munjor	100	Very limited Seepage	1.00	Somewhat limited Seepage	0.07	Very limited Deep to water	1.00
Pf:							
Penden	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.08	Very limited Deep to water	1.00
Pk:							
Penden	100	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.08	Very limited Deep to water	1.00

WATER MANAGEMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Pond Reservoir Area		Embankments, Dikes, and Levees		Excavated Ponds (Aquifer-fed)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Po:							
Penden	100	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.11	Deep to water	1.00
		Slope	0.00				
Rf:							
Roxbury	100	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.67	Deep to water	1.00
Ub:							
Uly	100	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Deep to water	1.00
Uc:							
Uly	100	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Deep to water	1.00
Vo:							
Voda	100	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
				Piping	0.91	Cutbanks cave	0.10
W:							
Water	100	Not rated		Not rated		Not rated	
Wb:							
Wakeen	100	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.83	Deep to water	1.00
		Depth to bedrock	0.09	Piping	0.50		
Wp:							
Wakeen	70	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.77	Deep to water	1.00
		Depth to bedrock	0.06	Piping	0.50		

SANITARY FACILITIES
Trego County, Kansas

Sanitary Facilities

The following tables show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A trench sanitary landfill is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

SANITARY FACILITIES
Trego County, Kansas

In an area sanitary landfill, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

SANITARY FACILITIES--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
051AO:					
Armo	100	Somewhat limited		Very limited	
		Restricted permeability	0.50	Seepage	1.00
				Slope	0.67
051BG:					
Bogue	100	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	0.91
051CC:					
Campus	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Slope	0.67
				Seepage	0.50
Carlson	35	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Slope	0.67
				Seepage	0.50
051CD:					
Campus	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Slope	1.00
		Slope	0.16	Seepage	0.50
Penden	45	Somewhat limited		Very limited	
		Restricted permeability	0.50	Slope	1.00
		Slope	0.16	Seepage	0.50
051EG:					
Eltree	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Slope	0.67
				Seepage	0.50
051HC:					
Harney	100	Very limited		Somewhat limited	
		Restricted permeability	1.00	Slope	0.67
				Seepage	0.50
051HD:					
Harney	100	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.33
051HE:					
Armo	50	Somewhat limited		Very limited	
		Restricted permeability	0.50	Seepage	1.00
				Slope	0.67
Harney	50	Very limited		Somewhat limited	
		Restricted permeability	1.00	Slope	0.67
				Seepage	0.50
051HK:					
Harney	60	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.00
Wakeen	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.00
051HL:					
Armo	50	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Restricted permeability	0.50	Seepage	1.00
Heizer	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
				Content of large stones	0.00

SANITARY FACILITIES--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
051MO:					
Mento	100	Very limited		Somewhat limited	
		Restricted permeability	1.00	Slope	0.67
051WH:					
Wakeen	100	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.50	Slope	0.67
				Seepage	0.50
063BR:					
Bridgeport	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.50	Seepage	0.50
063EB:					
Elkader	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.00
063EC:					
Elkader	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Slope	0.67
				Seepage	0.50
063ED:					
Elkader	55	Somewhat limited		Very limited	
		Restricted permeability	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
Manvel	45	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.00		
063KP:					
Kim	60	Somewhat limited		Very limited	
		Restricted permeability	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
Penden	40	Somewhat limited		Very limited	
		Restricted permeability	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
063MA:					
Manvel	100	Very limited		Somewhat limited	
		Restricted permeability	1.00	Slope	0.00
063MB:					
Manvel	65	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.00		
Badland	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
063MC:					
Munjor	60	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
Bridgeport	40	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.50	Seepage	0.50
063MD:					
Munjor	55	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
Inavale	45	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
063OT:					
Otero	100	Not limited		Very limited	
				Seepage	1.00
				Slope	0.00

SANITARY FACILITIES--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
063UB:					
Ulysses	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.00
063UC:					
Ulysses	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Slope	0.67
				Seepage	0.50
065PH:					
Penden	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Slope	0.91
				Seepage	0.50
065PO:					
Penden	65	Somewhat limited		Very limited	
		Restricted permeability	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
Uly	35	Somewhat limited		Very limited	
		Slope	0.96	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
065UD:					
Uly	100	Somewhat limited		Very limited	
		Restricted permeability	0.50	Slope	1.00
		Slope	0.04	Seepage	0.50
065WS:					
Wakeen	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	1.00
		Restricted permeability	0.50	Seepage	0.50
Nibson	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	1.00
				Seepage	0.50
135CC:					
Campus	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Slope	0.91
				Seepage	0.50
Canlon	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	0.91
				Seepage	0.50
135RS:					
Roxbury	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.50	Seepage	0.50
135UE:					
Uly	60	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.00
Coly	40	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.00
AED:					
Arents, Earthen Dam	100	Not rated		Not rated	
Ap:					
Armo	100	Somewhat limited		Very limited	
		Restricted permeability	0.50	Seepage	1.00
				Slope	0.00
Ar:					
Armo	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Slope	0.67
				Seepage	0.50

SANITARY FACILITIES--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
As:					
Armo	100	Somewhat limited		Very limited	
		Restricted permeability	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
Bd:					
Badland	70	Not rated		Not rated	
Manvel	30	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
Bg:					
Bogue	100	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
Br:					
Brownell	100	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Slope	0.91
				Seepage	0.50
				Content of large stones	0.01
Cc:					
Campus	70	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
Canlon	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Cf:					
Carlson	100	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.00
Cu:					
Coly	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.33
Do:					
Dorrance	100	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
EF:					
Eltree	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.00
Ha:					
Harney	100	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
HB:					
Harney	100	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.00
He:					
Harney	70	Very limited		Somewhat limited	
		Restricted permeability	1.00	Seepage	0.50
				Slope	0.00
Mento	30	Very limited		Somewhat limited	
		Restricted permeability	1.00	Slope	0.00
Hg:					
Heizer	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00

SANITARY FACILITIES--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
				Seepage	0.50
				Content of large stones	0.01
Brownell	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.50	Slope	1.00
		Slope	0.16	Seepage	0.50
Hm:					
Holdrege	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.00
Ho:					
Hord	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
		Flooding	0.40	Flooding	0.40
Hu:					
Humbarger	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.50	Seepage	0.50
Hw:					
Humbarger	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.50	Seepage	0.50
If:					
Inavale	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
Mc:					
Mccook	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.50	Seepage	0.50
MD:					
Mccook	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
		Flooding	0.40	Flooding	0.40
Mu:					
Munjor	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
Pf:					
Penden	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Slope	0.67
				Seepage	0.50
Pk:					
Penden	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Slope	0.67
				Seepage	0.50
Po:					
Penden	100	Somewhat limited		Very limited	
		Restricted permeability	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
Rf:					
Roxbury	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
		Flooding	0.40	Flooding	0.40
Ub:					
Uly	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.00
Uc:					
Uly	100	Somewhat limited		Somewhat limited	
		Restricted permeability	0.50	Slope	0.67
				Seepage	0.50

SANITARY FACILITIES--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Vo:					
Voda	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.50
W:					
Water	100	Not rated		Not rated	
Wb:					
Wakeen	100	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.50	Seepage	0.50
				Slope	0.00
Wp:					
Wakeen	70	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.50	Slope	0.91
				Seepage	0.50

SANITARY FACILITIES--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
051AO:							
Armo	100	Very limited		Not limited		Somewhat limited	
		Seepage	1.00			Too clayey	0.50
		Too clayey	0.50				
051BG:							
Bogue	100	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00			Hard to compact	1.00
051CC:							
Campus	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00				
Carlson	35	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
051CD:							
Campus	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.16	Slope	0.16
		Slope	0.16				
Penden	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.16	Too clayey	0.50
		Slope	0.16			Slope	0.16
051EG:							
Eltree	100	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
051HC:							
Harney	100	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
051HD:							
Harney	100	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
051HE:							
Armo	50	Very limited		Not limited		Somewhat limited	
		Seepage	1.00			Too clayey	0.50
		Too clayey	0.50				
Harney	50	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
051HK:							
Harney	60	Not limited		Not limited		Somewhat limited	
						Too clayey	0.50
Wakeen	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00			Too clayey	0.50
		Too clayey	0.50				
051HL:							
Armo	50	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Slope	0.63	Slope	0.63
		Slope	0.63			Too clayey	0.50
		Too clayey	0.50				
Heizer	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00			Carbonate content	1.00
						Gravel content	0.96
051MO:							
Mento	100	Very limited		Not limited		Somewhat limited	
		Seepage	1.00			Too clayey	0.50
		Too clayey	0.50				
051WH:							
Wakeen	100	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00			Too clayey	0.50
		Too clayey	0.50				
063BR:							
Bridgeport	100	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
063EB:							
Elkader	100	Not limited		Not limited		Not limited	
063EC:							
Elkader	100	Not limited		Not limited		Not limited	
063ED:							
Elkader	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Slope	0.37	Slope	0.37
Manvel	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.00	Slope	0.00	Slope	0.00
063KP:							
Kim	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Slope	0.37	Slope	0.37
Penden	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
		Slope	0.37			Slope	0.37

SANITARY FACILITIES--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
063MA:							
Manvel	100	Not limited		Not limited		Not limited	
063MB:							
Manvel	65	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.00	Slope	0.00	Slope	0.00
Badland	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00				
063MC:							
Munjor	60	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Seepage	0.50
		Seepage	1.00	Seepage	1.00		
Bridgeport	40	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
063MD:							
Munjor	55	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Seepage	0.50
		Seepage	1.00	Seepage	1.00		
Inavale	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Too Sandy	0.50
		Too Sandy	1.00				
063OT:							
Otero	100	Not limited		Not limited		Somewhat limited	
						Seepage	0.50
063UB:							
Ulysses	100	Not limited		Not limited		Not limited	
063UC:							
Ulysses	100	Not limited		Not limited		Not limited	
065PH:							
Penden	100	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
065PO:							
Penden	65	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
		Slope	0.37			Slope	0.37
Uly	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.96	Slope	0.96	Slope	0.96
065UD:							
Uly	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04	Slope	0.04
065WS:							
Wakeen	60	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.84	Slope	0.84
		Slope	0.84			Too clayey	0.50
		Too clayey	0.50				
Nibson	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.84	Slope	0.84
		Slope	0.84			Too clayey	0.50
		Too clayey	0.50				
135CC:							
Campus	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00			Too clayey	0.50
		Too clayey	0.50				
Canlon	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00				
135RS:							
Roxbury	100	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Too clayey	0.50
		Too clayey	0.50				
135UE:							
Uly	60	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
Coly	40	Not limited		Not limited		Not limited	
AED:							
Arents, Earthen Dam	100	Not rated		Not rated		Not rated	
Ap:							
Armo	100	Very limited		Not limited		Somewhat limited	
		Seepage	1.00			Too clayey	0.50
		Too clayey	0.50				
Ar:							
Armo	100	Not limited		Not limited		Not limited	
As:							
Armo	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Slope	0.37	Slope	0.37

SANITARY FACILITIES--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bd:							
Badland	70	Not rated		Not rated		Not rated	
Manvel	30	Not limited		Not limited		Not limited	
Bg:							
Bogue	100	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Hard to compact	1.00
		Seepage	1.00			Slope	1.00
Br:							
Brownell	100	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00			Carbonate content	1.00
						Gravel content	0.98
Cc:							
Campus	70	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.37	Slope	0.37
		Slope	0.37				
Canlon	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00				
Cf:							
Carlson	100	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
Cu:							
Coly	100	Not limited		Not limited		Not limited	
Do:							
Dorrance	100	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Too Sandy	1.00
		Too Sandy	1.00	Slope	0.04	Seepage	1.00
		Slope	0.04			Slope	0.04
EF:							
Eltree	100	Not limited		Not limited		Not limited	
Ha:							
Harney	100	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
HB:							
Harney	100	Not limited		Not limited		Not limited	
He:							
Harney	70	Not limited		Not limited		Not limited	
Mento	30	Not limited		Not limited		Not limited	
Hg:							
Heizer	60	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00			Carbonate content	1.00
						Gravel content	0.96
Brownell	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.16	Carbonate content	1.00
		Slope	0.16			Gravel content	0.96
						Slope	0.16
Hm:							
Holdrege	100	Somewhat limited		Not limited		Very limited	
		Too clayey	0.50			Hard to compact	1.00
						Too clayey	0.50
Ho:							
Hord	100	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Flooding	0.40		
Hu:							
Humbarger	100	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
Hw:							
Humbarger	100	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
If:							
Inavale	100	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too Sandy	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too Sandy	1.00				
Mc:							
Mccook	100	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
MD:							
Mccook	100	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Flooding	0.40		
Mu:							
Munjor	100	Very limited		Very limited		Somewhat limited	

SANITARY FACILITIES--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
		Flooding	1.00	Flooding	1.00	Seepage	0.50
		Seepage	1.00	Seepage	1.00		
Pf:							
Penden	100	Not limited		Not limited		Not limited	
Pk:							
Penden	100	Not limited		Not limited		Not limited	
Po:							
Penden	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Slope	0.37	Slope	0.37
Rf:							
Roxbury	100	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Flooding	0.40		
Ub:							
Uly	100	Not limited		Not limited		Not limited	
Uc:							
Uly	100	Not limited		Not limited		Not limited	
Vo:							
Voda	100	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.96
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
W:							
Water	100	Not rated		Not rated		Not rated	
Wb:							
Wakeen	100	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00			Too clayey	0.50
		Too clayey	0.50				
Wp:							
Wakeen	70	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00			Too clayey	0.50
		Too clayey	0.50				

AGRICULTURAL WASTE MANAGEMENT
Trego County, Kansas

The nature of the soil is also important in the application of organic wastes and wastewater to land as fertilizers and irrigation; it is also important when the soil is used as a medium for treatment and disposal of these wastes. Favorable soil properties are required to prevent environmental damage.

The use of organic wastes and wastewater as production resources will result in energy conservation, prevent the waste of these important resources, and prevent problems associated with their disposal. Where disposal is the goal, and a maximum amount is disposed in a minimum area to hold costs to a minimum, risk of environmental damage is the principal constraint. Where the reuse goal is pursued, and a minimum amount is applied to a maximum area to obtain the greatest benefit, environmental damage is unlikely.

Interpretations developed for waste management may include ratings for (1) manure and food processing wastes; (2) municipal sewage sludge; (3) irrigation use of wastewater; or (4) treatment of wastewater by the slow rate process, overland flow process, or rapid infiltration process. If available, these should be located in this subsection.

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

The Ag–Waste tables show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food–processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food–processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of these tables, the effluent in lagoons and storage ponds is from facilities used to treat or store food–processing wastewater or domestic or animal waste. Domestic and food–processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, phosphorus, heavy metals, and salts are not added in excessive amounts.

The ratings in the tables are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food–processing waste, application of sewage sludge, and disposal of wastewater by irrigation)and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. Not limited indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. Slightly limited indicates that the soil has features that are generally favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. Somewhat limited indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. Very limited indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Application of manure and food–processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food–processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food–processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density.The wind erodibility group, the soil erodibility factor K, and slope are consideredin estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

AGRICULTURAL WASTE MANAGEMENT
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The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food–processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding.

The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation–exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

See the National Soil Handbook, September 1992, Part 620, for criteria used in rating soils for sanitary facilities and waste management.

AGRICULTURAL WASTE MANAGEMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
051AO:							
Armo	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Filtering capacity	0.00	Filtering capacity	0.00	Too steep for surface application	0.31
						Filtering capacity	0.00
051BG:							
Bogue	100	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Droughty	0.96	Droughty	0.96	Droughty	0.96
		Runoff limitation	0.40	Depth to bedrock	0.29	Too steep for surface application	0.66
		Depth to bedrock	0.29			Depth to bedrock	0.29
						Too steep for sprinkler application	0.00
051CC:							
Campus	65	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	0.20	Depth to bedrock	0.20	Too steep for surface application	0.31
						Depth to bedrock	0.20
Carlson	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Too steep for surface application	0.31
						Restricted permeability	0.22
051CD:							
Campus	55	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.20	Depth to bedrock	0.20	Too steep for surface application	1.00
		Slope	0.16	Slope	0.16	Too steep for sprinkler application	0.39
						Depth to bedrock	0.20
Penden	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Too steep for surface application	1.00
						Too steep for sprinkler application	0.39
051EG:							
Eltree	100	Not limited		Not limited		Somewhat limited	
						Too steep for surface application	0.31
051HC:							
Harney	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Too steep for surface application	0.31
						Restricted permeability	0.22
051HD:							
Harney	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Restricted permeability	0.22
						Too steep for surface application	0.08
051HE:							
Armo	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Filtering capacity	0.00	Filtering capacity	0.00	Too steep for surface application	0.31
						Filtering capacity	0.00
Harney	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Too steep for surface application	0.31

AGRICULTURAL WASTE MANAGEMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
						Restricted permeability	0.22
051HK:							
Harney	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Restricted permeability	0.22
Wakeen	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	0.06	Depth to bedrock	0.06	Depth to bedrock	0.06
051HL:							
Armo	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Too steep for surface application	1.00
		Filtering capacity	0.00	Filtering capacity	0.00	Too steep for sprinkler application	0.77
						Filtering capacity	0.00
Heizer	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Droughty	1.00	Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Too steep for surface application	1.00
		Runoff limitation	0.40			Too steep for sprinkler application	1.00
051MO:							
Mento	100	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
						Too steep for surface application	0.31
051WH:							
Wakeen	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	0.46	Depth to bedrock	0.46	Depth to bedrock	0.46
						Too steep for surface application	0.31
063BR:							
Bridgeport	100	Somewhat limited		Very limited		Somewhat limited	
		Flooding	0.60	Flooding	1.00	Flooding	0.60
063EB:							
Elkader	100	Not limited		Not limited		Not limited	
063EC:							
Elkader	100	Not limited		Not limited		Somewhat limited	
						Too steep for surface application	0.31
063ED:							
Elkader	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Too steep for surface application	1.00
						Too steep for sprinkler application	0.59
Manvel	45	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Too steep for surface application	1.00
		Slope	0.00	Slope	0.00	Restricted permeability	0.22
						Too steep for sprinkler application	0.10
063KP:							
Kim	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Too steep for surface application	1.00
		Restricted permeability	0.30	Restricted permeability	0.22	Too steep for sprinkler application	0.59
						Restricted permeability	0.22
Penden	40	Somewhat limited		Somewhat limited		Very limited	

AGRICULTURAL WASTE MANAGEMENT--Continued
Trego County, Kansas

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Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
		Slope	0.37	Slope	0.37	Too steep for surface application	1.00
						Too steep for sprinkler application	0.59
063MA:							
Manvel	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Restricted permeability	0.22
063MB:							
Manvel	65	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Too steep for surface application	1.00
		Slope	0.00	Slope	0.00	Restricted permeability	0.22
						Too steep for sprinkler application	0.10
Badland	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Low adsorption	1.00	Low adsorption	1.00	Low adsorption	1.00
		Slope	1.00	Slope	1.00	Too steep for surface application	1.00
						Too steep for sprinkler application	1.00
063MC:							
Munjor	60	Very limited		Very limited		Very limited	
		Filtering capacity	1.00	Flooding	1.00	Filtering capacity	1.00
		Flooding	0.60	Filtering capacity	1.00	Flooding	0.60
Bridgeport	40	Somewhat limited		Very limited		Somewhat limited	
		Flooding	0.60	Flooding	1.00	Flooding	0.60
		Filtering capacity	0.00	Filtering capacity	0.00	Filtering capacity	0.00
063MD:							
Munjor	55	Very limited		Very limited		Very limited	
		Filtering capacity	1.00	Flooding	1.00	Filtering capacity	1.00
		Flooding	0.60	Filtering capacity	1.00	Flooding	0.60
Inavale	45	Very limited		Very limited		Very limited	
		Filtering capacity	1.00	Flooding	1.00	Filtering capacity	1.00
		Flooding	0.60	Filtering capacity	1.00	Flooding	0.60
		Leaching limitation	0.45	Droughty	0.14	Droughty	0.14
		Droughty	0.14				
063OT:							
Otero	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Filtering capacity	0.00	Filtering capacity	0.00	Filtering capacity	0.00
063UB:							
Ulysses	100	Not limited		Not limited		Not limited	
063UC:							
Ulysses	100	Not limited		Not limited		Somewhat limited	
						Too steep for surface application	0.31
065PH:							
Penden	100	Not limited		Not limited		Somewhat limited	
						Too steep for surface application	0.66
						Too steep for sprinkler application	0.00
065PO:							
Penden	65	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Too steep for surface application	1.00

AGRICULTURAL WASTE MANAGEMENT--Continued
Trego County, Kansas

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Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
						Too steep for sprinkler application	0.59
Uly	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.96	Slope	0.96	Too steep for surface application	1.00
						Too steep for sprinkler application	0.97
065UD:							
Uly	100	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Too steep for surface application	1.00
						Too steep for sprinkler application	0.22
065WS:							
Wakeen	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Too steep for surface application	1.00
		Depth to bedrock	0.20	Depth to bedrock	0.20	Too steep for sprinkler application	0.89
						Depth to bedrock	0.20
Nibson	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Droughty	1.00	Droughty	1.00
		Slope	0.84	Slope	0.84	Too steep for surface application	1.00
		Runoff limitation	0.40			Too steep for sprinkler application	0.89
135CC:							
Campus	65	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	0.65	Depth to bedrock	0.65	Too steep for surface application	0.66
		Droughty	0.14	Droughty	0.14	Depth to bedrock	0.65
						Droughty	0.14
						Too steep for sprinkler application	0.00
Canlon	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Droughty	1.00	Droughty	1.00
		Runoff limitation	0.40			Too steep for surface application	0.66
						Too steep for sprinkler application	0.00
135RS:							
Roxbury	100	Somewhat limited		Very limited		Somewhat limited	
		Flooding	0.60	Flooding	1.00	Flooding	0.60
135UE:							
Uly	60	Not limited		Not limited		Not limited	
Coly	40	Not limited		Not limited		Not limited	
AED:							
Arents, Earthen Dam	100	Not rated		Not rated		Not rated	
Ap:							
Armo	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Filtering capacity	0.00	Filtering capacity	0.00	Filtering capacity	0.00
Ar:							
Armo	100	Not limited		Not limited		Somewhat limited	
						Too steep for surface application	0.31
As:							
Armo	100	Somewhat limited		Somewhat limited		Very limited	

AGRICULTURAL WASTE MANAGEMENT--Continued
Trego County, Kansas

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Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
		Slope	0.37	Slope	0.37	Too steep for surface application	1.00
						Too steep for sprinkler application	0.59
Bd:							
Badland	70	Not rated		Not rated		Not rated	
Manvel	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Too steep for surface application	0.91
						Restricted permeability	0.22
						Too steep for sprinkler application	0.02
Bg:							
Bogue	100	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
		Droughty	1.00	Droughty	1.00	Too steep for surface application	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Depth to bedrock	0.71	Depth to bedrock	0.71	Too steep for sprinkler application	1.00
		Runoff limitation	0.40			Depth to bedrock	0.71
Br:							
Brownell	100	Very limited		Very limited		Very limited	
		Droughty	1.00	Droughty	1.00	Droughty	1.00
		Depth to bedrock	0.65	Depth to bedrock	0.65	Too steep for surface application	0.66
						Depth to bedrock	0.65
						Too steep for sprinkler application	0.00
Cc:							
Campus	70	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Too steep for surface application	1.00
		Depth to bedrock	0.06	Depth to bedrock	0.06	Too steep for sprinkler application	0.59
						Depth to bedrock	0.06
Canlon	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Too steep for surface application	1.00
		Droughty	0.93	Droughty	0.93	Too steep for sprinkler application	1.00
		Runoff limitation	0.40			Droughty	0.93
Cf:							
Carlson	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.30	Restricted permeability	0.22	Restricted permeability	0.22
Cu:							
Coly	100	Not limited		Not limited		Somewhat limited	
						Too steep for surface application	0.08
Do:							
Dorrance	100	Very limited		Very limited		Very limited	
		Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
		Droughty	0.74	Droughty	0.74	Too steep for surface application	1.00
		Leaching limitation	0.45	Slope	0.04	Droughty	0.74

AGRICULTURAL WASTE MANAGEMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
		Slope	0.04			Too steep for sprinkler application	0.22
EF:							
Eltree	100	Not limited		Not limited		Not limited	
Ha:							
Harney	100	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
HB:							
Harney	100	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
He:							
Harney	70	Somewhat limited Restricted permeability	0.30	Somewhat limited Restricted permeability	0.22	Somewhat limited Restricted permeability	0.22
Mento	30	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00	Very limited Restricted permeability	1.00
Hg:							
Heizer	60	Very limited Depth to bedrock Droughty Slope	1.00 1.00 1.00	Very limited Droughty Depth to bedrock Slope	1.00 1.00 1.00	Very limited Droughty Depth to bedrock Too steep for surface application	1.00 1.00 1.00
		Runoff limitation	0.40			Too steep for sprinkler application	1.00
Brownell	40	Very limited Droughty Depth to bedrock	1.00 0.90	Very limited Droughty Depth to bedrock	1.00 0.90	Very limited Droughty Too steep for surface application	1.00 1.00
		Slope	0.16	Slope	0.16	Depth to bedrock Too steep for sprinkler application	0.90 0.39
Hm:							
Holdrege	100	Not limited		Not limited		Not limited	
Ho:							
Hord	100	Not limited		Somewhat limited Flooding	0.40	Not limited	
Hu:							
Humbarger	100	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
Hw:							
Humbarger	100	Somewhat limited Flooding	0.60	Very limited Flooding	1.00	Somewhat limited Flooding	0.60
If:							
Inavale	100	Very limited Flooding Filtering capacity Leaching limitation Droughty	1.00 1.00 0.45 0.20	Very limited Flooding Filtering capacity Droughty	1.00 1.00 0.20	Very limited Flooding Filtering capacity Droughty	1.00 1.00 0.20
Mc:							
Mccook	100	Somewhat limited Flooding	0.60	Very limited Flooding	1.00	Somewhat limited Flooding	0.60
MD:							
Mccook	100	Not limited		Somewhat limited Flooding	0.40	Not limited	
Mu:							
Munjor	100	Very limited Filtering capacity Flooding	1.00 0.60	Very limited Flooding Filtering capacity	1.00 1.00	Very limited Filtering capacity Flooding	1.00 0.60
Pf:							
Penden	100	Not limited		Not limited		Somewhat limited Too steep for surface application	0.31
Pk:							
Penden	100	Not limited		Not limited		Somewhat limited	

AGRICULTURAL WASTE MANAGEMENT--Continued
Trego County, Kansas

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct of map unit	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
						Too steep for surface application	0.31
Po:							
Penden	100	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Too steep for surface application	1.00
						Too steep for sprinkler application	0.59
Rf:							
Roxbury	100	Not limited		Somewhat limited		Not limited	
				Flooding	0.40		
Ub:							
Uly	100	Not limited		Not limited		Not limited	
Uc:							
Uly	100	Not limited		Not limited		Somewhat limited	
						Too steep for surface application	0.31
Vo:							
Voda	100	Very limited		Very limited		Very limited	
		Restricted permeability	1.00	Flooding	1.00	Restricted permeability	1.00
		Depth to saturated zone	1.00	Restricted permeability	1.00	Depth to saturated zone	1.00
		Flooding	0.60	Depth to saturated zone	1.00	Flooding	0.60
W:							
Water	100	Not rated		Not rated		Not rated	
Wb:							
Wakeen	100	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	0.35	Depth to bedrock	0.35	Depth to bedrock	0.35
Wp:							
Wakeen	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	0.20	Depth to bedrock	0.20	Too steep for surface application	0.66
						Depth to bedrock	0.20
						Too steep for sprinkler application	0.00

WIN-PST SPISP II
SOIL SENSITIVITY TO PESTICIDE LOSS RATING REPORT

Soils Data Table: SOIL_KS Sort Order: MUSYM

Trego County, Kansas: KS195

MUSYM/SEQ#	COMPONENT/TEXTURE/MU%	HYD	KFACT	SURFACE DEPTH	% OM	SPISP II Ratings: Leaching (SLP)	Solution Runoff (SSRP)	Adsorbed Runoff (SARP)
051AO 1	ARMO L 100%	B	0.28	5"	2.0%	I	I	I
051BG 1	BOGUE C 100%	D	0.28	6"	2.0%	V	H	H
051CC 1	CAMPUS L 65%	B	0.28	9"	1.5%	I	I	I
051CC 2	CARLSON SIL 35%	B	0.32	8"	2.0%	I	I	I
051CD 1	CAMPUS L 55%	B	0.28	9"	1.5%	I	I	I
051CD 2	PENDEN CL 45%	B	0.28	14"	2.5%	I	I	I
051EG 1	ELTREE SIL 100%	B	0.32	26"	2.0%	L	I	I
051HC 1	HARNEY SIL 100%	B	0.32	6"	3.0%	I	I	I
051HD 1	HARNEY SICL 100%	B	0.32	6"	3.0%	I	I	I
051HE 1	ARMO L 50%	B	0.28	5"	2.0%	I	I	I
051HE 2	HARNEY SIL 50%	B	0.32	6"	3.0%	I	I	I
051HK 1	HARNEY SIL 60%	B	0.32	6"	3.0%	I	I	I
051HK 2	WAKEEN SIL 40%	B	0.32	5"	2.0%	I	I	I
051HL 1	ARMO L 50%	B	0.28	15"	2.0%	I	I	I
051HL 2	HEIZER GR-L 50%	D	0.20	6"	0.0%	V	H	H (s)
051MO 1	MENTO SICL 100%	C	0.37	6"	2.0%	L	H	H
051WH 1	WAKEEN SIL 100%	B	0.32	11"	2.0%	I	I	I
063BR 1	BRIDGEPORT SIL 100%	B	0.32	13"	2.5%	I	I	I
063EB 1	ELKADER SIL 100%	B	0.32	9"	2.0%	I	I	I
063EC 1	ELKADER SIL 100%	B	0.32	9"	2.0%	I	I	I
063ED 1	ELKADER SIL 55%	B	0.32	9"	2.0%	I	I	I
063ED 2	MANVEL SIL 45%	B	0.37	3"	1.3%	H	I	I
063KP 1	KIM CL 60%	B	0.28	5"	0.8%	H	I	I
063KP 2	PENDEN CL 40%	B	0.28	10"	2.5%	I	I	I
063MA 1	MANVEL SIL 100%	B	0.37	3"	1.3%	H	I	I
063MB 1	MANVEL SIL 65%	B	0.37	3"	1.3%	H	I	I
063MB 2	BADLAND SIL 35%		0.00	1"	0.0%	?	?	?
063MC 1	MUNJOR SL 60%	B	0.24	11"	0.8%	H	I	I

WIN-PST SPISP II
SOIL SENSITIVITY TO PESTICIDE LOSS RATING REPORT

Soils Data Table: SOIL_KS Sort Order: MUSYM

Trego County, Kansas: KS195

063MC 2	BRIDGEPORT FSL 40%	B	0.20	13"	2.0% I	I	I
063MD 1	MUNJOR SL 55%	B	0.24	11"	0.8% H	I	I
063MD 2	INAVALE LS 45%	A	0.17	7"	0.8% H	L	L
063OT 1	OTERO FSL 100%	B	0.24	6"	1.3% H	I	I
063UB 1	ULYSSES SIL 100%	B	0.32	7"	2.0% I	I	I
063UC 1	ULYSSES SIL 100%	B	0.32	6"	1.5% H	I	I
065PH 1	PENDEN L 100%	B	0.28	7"	2.5% I	I	I
065PO 1	PENDEN L 65%	B	0.28	7"	2.5% I	I	I
065PO 2	ULY SIL 35%	B	0.32	12"	2.0% I	I	H (s)
065UD 1	ULY SIL 100%	B	0.32	12"	2.0% I	I	I
065WS 1	WAKEEN SIL 60%	B	0.32	12"	2.0% I	I	H (s)
065WS 2	NIBSON SIL 40%	D	0.32	6"	2.0% V	H	H (s)
135CC 1	CAMPUS L 65%	B	0.28	7"	1.5% I	I	I
135CC 2	CANLON L 35%	D	0.32	4"	0.8% V	H	H (s)
135RS 1	ROXBURY SIL 100%	B	0.32	21"	2.0% I	I	I
135UE 1	ULY SIL 60%	B	0.32	8"	1.5% I	I	I
135UE 2	COLY SIL 40%	B	0.43	3"	0.8% H	I	I
AED 1	ARENTS, EARTHEN DAM 100%		0.00	0"	0.0% ?	?	?
Ap 1	ARMO L 100%	B	0.28	17"	2.0% I	I	I
Ar 1	ARMO L 100%	B	0.28	19"	2.0% I	I	I
As 1	ARMO L 100%	B	0.28	16"	2.0% I	I	I
Bd 1	BADLAND SIL 70%		0.00	1"	0.0% ?	?	?
Bd 2	MANVEL SIL 30%	B	0.37	3"	1.3% H	I	I
Bg 1	BOGUE C 100%	D	0.28	6"	0.8% V	H	H (s)
Br 1	BROWNELL GR-L 100%	B	0.20	8"	1.5% H	I	I
Cc 1	CAMPUS L 70%	B	0.28	7"	1.5% I	I	I
Cc 2	CANLON L 30%	D	0.32	8"	1.3% V	H	H (s)
Cf 1	CARLSON SIL 100%	B	0.32	4"	2.0% H	I	I
Cu 1	COLY SIL 100%	B	0.43	4"	0.8% H	I	I
Do 1	DORRANCE SL 100%	A	0.20	11"	2.0% H	L	L

WIN-PST SPISP II
SOIL SENSITIVITY TO PESTICIDE LOSS RATING REPORT

Soils Data Table: SOIL_KS Sort Order: MUSYM

Trego County, Kansas: KS195

EF 1	ELTREE SIL 100%	B	0.32	9"	2.0%	I	I	I
Ha 1	HARNEY SIL 100%	B	0.32	5"	2.0%	I	I	I
HB 1	HARNEY SIL 100%	B	0.32	10"	3.0%	I	I	I
He 1	HARNEY SIL 70%	B	0.32	11"	3.0%	I	I	I
He 2	MENTO SIL 30%	C	0.37	8"	2.0%	L	H	H
Hg 1	HEIZER GR-L 60%	D	0.20	6"	1.5%	V	H	H (s)
Hg 2	BROWNELL GR-L 40%	B	0.20	9"	1.5%	H	I	I
Hm 1	HOLDREGE SIL 100%	B	0.32	11"	2.0%	I	I	I
Ho 1	HORD SIL 100%	B	0.32	13"	3.0%	I	I	I
Hu 1	HUMBARGER L 100%	B	0.28	28"	2.0%	L	I	I
Hw 1	HUMBARGER L 100%	B	0.28	21"	2.0%	I	I	I
If 1	INAVALE LS 100%	A	0.17	6"	0.8%	H	L	L
Mc 1	MCCOOK SIL 100%	B	0.32	14"	3.0%	I	I	I
MD 1	MCCOOK SIL 100%	B	0.32	11"	3.0%	I	I	I
Mu 1	MUNJOR SL 100%	B	0.24	6"	0.8%	H	I	I
Pf 1	PENDEN CL 100%	B	0.28	10"	2.5%	I	I	I
Pk 1	PENDEN CL 100%	B	0.28	5"	2.5%	I	I	I
Po 1	PENDEN L 100%	B	0.28	14"	2.5%	I	I	I
Rf 1	ROXBURY SIL 100%	B	0.32	29"	3.0%	L	I	I
Ub 1	ULY SIL 100%	B	0.32	8"	1.5%	I	I	I
Uc 1	ULY SIL 100%	B	0.32	8"	2.0%	I	I	I
Vo 1	VODA SICL 100%	C	0.32	7"	2.0%	H (w)	H	H
W 1	WATER 100%		0.00	0"	0.0%	?	?	?
Wb 1	WAKEEN SIL 100%	B	0.32	10"	2.0%	I	I	I
Wp 1	WAKEEN SIL 70%	B	0.32	4"	2.0%	H	I	I

(.\REPORTS\SOILS.TXT generated on 12/12/01 at 12:11:15)

H -- High
I -- Intermediate
L -- Low
V -- Very Low

```
Conditions that affect ratings:
    m    -- There are macropores in the surface horizon deeper than 24"
    w    -- The high water table comes within 24" of the surface during the growing season
    s    -- The field slope is greater than 15%

SPISP II S-Ratings:
   SLP   -- Soil Leaching Potential
   SSRP  -- Soil Solution Runoff Potential
   SARP  -- Soil Adsorbed Runoff Potential
```

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Trego County, Kansas

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed. The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (USDA, 1999) and "Keys to Soil Taxonomy"' (USDA, 1998) and in the "Soil Survey Manual" (USDA, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1996).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units in the Hydric Soil Interpretations table meet the definition of hydric soils and, in addition, have at east one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1996).

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

These map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Trego County, Kansas

All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
051AO:							
ARMO LOAM, 3 TO 7 PERCENT SLOPES, ERODED	ARMO	No	hillslope	---	---	---	---
051BG:							
BOGUE CLAY, 3 TO 8 PERCENT SLOPES	BOGUE	No	hillslope	---	---	---	---
	---	---	terrace	---	---	---	---
051CC:							
CAMPUS-CARLSON COMPLEX, 3 TO 7 PERCENT SLOPES	CAMPUS	No	hillslope	---	---	---	---
	CARLSON	No	ridge	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	terrace	2A	YES	NO	NO
051CD:							
CAMPUS-PENDEN COMPLEX, 5 TO 15 PERCENT SLOPES	CAMPUS	No	hillslope	---	---	---	---
	PENDEN	No	hillslope	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	terrace	2A	YES	NO	NO
051EG:							
ELTREE SILT LOAM, 3 TO 7 PERCENT SLOPES	ELTREE	No	terrace	---	---	---	---
051HC:							
HARNEY SILT LOAM, 3 TO 7 PERCENT SLOPES	HARNEY	No	plain	---	---	---	---
051HD:							
HARNEY SILTY CLAY LOAM, 2 TO 5 PERCENT SLOPES, ERODED	HARNEY	No	plain	---	---	---	---
051HE:							
HARNEY-ARMO COMPLEX, 3 TO 7 PERCENT SLOPES, ERODED	ARMO	No	hillslope	---	---	---	---
	HARNEY	No	plain	---	---	---	---
051HK:							
HARNEY-WAKEEN SILT LOAMS, 1 TO 3 PERCENT SLOPES	HARNEY	No	plain	---	---	---	---
	WAKEEN	No	hillslope	---	---	---	---
051HL:							
HEIZER-ARMO COMPLEX, 8 TO 25 PERCENT SLOPES	ARMO	No	hillslope	---	---	---	---
	HEIZER	No	hillslope	---	---	---	---
051MO:							
MENTO SOILS, 3 TO 7 PERCENT SLOPES, ERODED	MENTO	No	divide	---	---	---	---
051WH:							
WAKEEN SILT LOAM, 3 TO 7 PERCENT SLOPES	WAKEEN	No	hillslope	---	---	---	---
	SIDEHILL SEEP	Yes	terrace	2B3	YES	NO	NO
063BR:							
BRIDGEPORT SILT LOAM, OCCASIONALLY FLOODED	BRIDGEPORT	No	terrace	---	---	---	---
063EB:							
ELKADER SILT LOAM, 1 TO 3 PERCENT SLOPES	ELKADER	No	fan	---	---	---	---
063EC:							
ELKADER SILT LOAM, 3 TO 6 PERCENT SLOPES	ELKADER	No	fan	---	---	---	---
063ED:							
ELKADER AND MANVEL SILT LOAMS, 6 TO 15 PERCENT SLOPES	ELKADER	No	fan	---	---	---	---
	MANVEL	No	fan	---	---	---	---
063KP:							
KIM-PENDEN CLAY LOAMS, 6 TO 15 PERCENT SLOPES	KIM	No	hillslope	---	---	---	---
	PENDEN	No	hillslope	---	---	---	---
063MA:							
MANVEL SILT LOAM, 1 TO 3 PERCENT SLOPES	MANVEL	No	fan	---	---	---	---
063MB:							
MANVEL-BADLAND COMPLEX, 6 TO 40 PERCENT SLOPES	MANVEL	No	fan	---	---	---	---
	BADLAND	Unranked	erosion remnant	---	---	---	---

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Trego County, Kansas

All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
063MC:							
MUNJOR-BRIDGEPORT COMPLEX, OCCASIONALLY FLOODED	MUNJOR	No	stream terrace	---	---	---	---
	BRIDGEPORT	No	flood plain	---	---	---	---
063MD:							
MUNJOR-INAVALE COMPLEX, OCCASIONALLY FLOODED	MUNJOR	No	flood plain	---	---	---	---
	INAVALE	No	flood plain	---	---	---	---
063OT:							
OTERO FINE SANDY LOAM, 1 TO 4 PERCENT SLOPES	OTERO	No	hillslope	---	---	---	---
063UB:							
ULYSSES SILT LOAM, 1 TO 3 PERCENT SLOPES	ULYSSES	No	ridge	---	---	---	---
063UC:							
ULYSSES SILT LOAM, 3 TO 6 PERCENT SLOPES	ULYSSES	No	plain	---	---	---	---
065PH:							
PENDEN LOAM, 3 TO 8 PERCENT SLOPES	PENDEN	No	hillslope	---	---	---	---
065PO:							
PENDEN-ULY COMPLEX, 7 TO 20 PERCENT SLOPES	PENDEN	No	hillslope	---	---	---	---
	ULY	No	hillslope	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	drainageway	2A	YES	NO	NO
065UD:							
ULY SILT LOAM, 6 TO 11 PERCENT SLOPES	ULY	No	hillslope	---	---	---	---
065WS:							
WAKEEN-NIBSON SILT LOAMS, 8 TO 20 PERCENT SLOPES	WAKEEN	No	hillslope	---	---	---	---
	NIBSON	No	hillslope	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	drainageway	2A	YES	NO	NO
135CC:							
CAMPUS-CANLON COMPLEX, 2 TO 40 PERCENT SLOPES	CAMPUS	No	plain	---	---	---	---
	CANLON	No	plain	---	---	---	---
135RS:							
ROXBURY SILT LOAM, FREQUENTLY FLOODED	ROXBURY	No	flood plain	---	---	---	---
135UE:							
ULY-COLY SILT LOAMS, 1 TO 3 PERCENT SLOPES, ERODED	ULY	No	plain	---	---	---	---
	COLY	No	plain	---	---	---	---
AED:							
ARENTS, EARTHEN DAM	ARENTS, EARTHEN DAM	Unranked	---	---	---	---	---
Ap:							
ARMO LOAM, 1 TO 3 PERCENT SLOPES	ARMO	No	hillslope	---	---	---	---
Ar:							
ARMO LOAM, 3 TO 7 PERCENT SLOPES	ARMO	No	hillslope	---	---	---	---
As:							
ARMO LOAM, 7 TO 15 PERCENT SLOPES	ARMO	No	hillslope	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	drainageway	2A	YES	NO	NO
Bd:							
BADLAND-MANVEL COMPLEX, 3 TO 20 PERCENT SLOPES	BADLAND	Unranked	erosion remnant	---	---	---	---
	MANVEL	No	fan	---	---	---	---
Bg:							
BOGUE CLAY, 8 TO 25 PERCENT SLOPES	BOGUE	No	hillslope	---	---	---	---
Br:							
BROWNELL GRAVELLY LOAM, 2 TO 10 PERCENT SLOPES	BROWNELL	No	hillslope	---	---	---	---
Cc:							
CAMPUS-CANLON LOAMS, 6 TO 30 PERCENT SLOPES	CAMPUS	No	hillslope	---	---	---	---
	CANLON	No	escarpment	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	terrace	2A	YES	NO	NO

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Trego County, Kansas

All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Cf: CARLSON SILT LOAM, 1 TO 3 PERCENT SLOPES	CARLSON	No	ridge	---	---	---	---
Cu: COLY SILT LOAM, 2 TO 6 PERCENT SLOPES	COLY	No	hillslope	---	---	---	---
Do: DORRANCE SANDY LOAM, 3 TO 15 PERCENT SLOPES	DORRANCE	No	hillslope	---	---	---	---
EF: ELTREE SILT LOAM, 1 TO 3 PERCENT SLOPES	ELTREE	No	terrace	---	---	---	---
Ha: HARNEY SILT LOAM, 0 TO 1 PERCENT SLOPES	HARNEY	No	plain	---	---	---	---
	NESS	Yes	depression	2B3,3	YES	NO	YES
HB: HARNEY SILT LOAM, 1 TO 3 PERCENT SLOPES	HARNEY	No	plain	---	---	---	---
He: HARNEY-MENTO SILT LOAMS, 1 TO 3 PERCENT SLOPES	HARNEY	No	plain	---	---	---	---
	MENTO	No	divide	---	---	---	---
Hg: HEIZER-BROWNELL GRAVELLY LOAMS, 5 TO 30 PERCENT SLOPES	HEIZER	No	hillslope	---	---	---	---
	BROWNELL	No	hillslope	---	---	---	---
Hm: HOLDREGE SILT LOAM, 1 TO 3 PERCENT SLOPES	HOLDREGE	No	plain	---	---	---	---
Ho: HORD SILT LOAM, RARELY FLOODED	HORD	No	terrace	---	---	---	---
Hu: HUMBARGER LOAM, CHANNELED	HUMBARGER	No	flood plain	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	terrace	4,2B3	YES	YES	NO
Hw: HUMBARGER LOAM, OCCASIONALLY FLOODED	HUMBARGER	No	flood plain	---	---	---	---
If: INAVALE LOAMY SAND, CHANNELED	INAVALE	No	flood plain	---	---	---	---
Mc: MCCOOK SILT LOAM, OCCASIONALLY FLOODED	MCCOOK	No	stream terrace	---	---	---	---
MD: MCCOOK SILT LOAM, RARELY FLOODED	MCCOOK	No	stream terrace	---	---	---	---
Mu: MUNJOR SANDY LOAM, OCCASIONALLY FLOODED	MUNJOR	No	flood plain	---	---	---	---
	UNNAMED HYDRIC SOILS	Yes	terrace	4,2B3	YES	YES	NO
Pf: PENDEN CLAY LOAM, 3 TO 7 PERCENT SLOPES	PENDEN	No	hillslope	---	---	---	---
Pk: PENDEN CLAY LOAM, 3 TO 7 PERCENT SLOPES, ERODED	PENDEN	No	hillslope	---	---	---	---
Po: PENDEN LOAM, 7 TO 15 PERCENT SLOPES	PENDEN	No	hillslope	---	---	---	---
Rf: ROXBURY SILT LOAM, RARELY FLOODED	ROXBURY	No	stream terrace	---	---	---	---
Ub: ULY SILT LOAM, 1 TO 3 PERCENT SLOPES	ULY	No	plain	---	---	---	---
	NESS	Yes	playa	2B3,3	YES	NO	YES
Uc: ULY SILT LOAM, 3 TO 6 PERCENT SLOPES	ULY	No	hillslope	---	---	---	---
Vo: VODA SILTY CLAY LOAM, OCCASIONALLY FLOODED	VODA	Yes	flood plain	2B3	YES	NO	NO
W: WATER	WATER	Yes	---	4,3	NO	YES	YES

HYDRIC SOIL INTERPRETATIONS
HYDRIC SOILS LIST
Trego County, Kansas

All mapunits are displayed regardless of hydric status and are listed in alpha-numeric order by mapunit symbol. The "Hydric Soils Criteria" columns indicate the conditions that caused the mapunit component to be classified as "Hydric" or "Non-Hydric". These criteria are defined in "Hydric Soils of the United States" (USDA Miscellaneous Publication No. 1491, June, 1991). See the "Criteria for Hydric Soils" endnote to determine the meaning of these columns. Spot symbols are footnoted at the end of the table.

Map symbol and map unit name	Component	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
Wb:							
WAKEEN SILT LOAM, 1 TO 3 PERCENT SLOPES	WAKEEN	No	hillslope	---	---	---	---
Wp:							
WAKEEN-NIBSON SILT LOAMS, 3 TO 8 PERCENT SLOPES	WAKEEN	No	hillslope	---	---	---	---
	NIBSON	No	hillslope	---	---	---	---

FOOTNOTE: There may be small areas of included soils or miscellaneous areas that are significant to use and management of the soil; yet are too small to delineate on the soil map at the map's original scale. These may be designated as spot symbols and are defined in the published Soil Survey Report or the USDA-NRCS Technical Guide, Part II.
Areas mapped as water or any map unit that contains one of the following conventional symbols is considered a hydric soil map unit: marshes or swamps; wet spots; depressions; streams, lakes and ponds.

1. All Histosols except Folists, or

2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Aquisalids, Pachic subgroups, or Cumulic subgroups that are:

   a. Somewhat poorly drained with a water table equal to 0.0 foot (ft) from the surface during the growing season, or

   b. poorly drained or very poorly drained and have either:

      (1) water table equal to 0.0 ft during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in),

      or for other soils

      (2) water table at less than or equal to 0.5 ft from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in, or

      (3) water table at less than or equal to 1.0 ft from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or

3. Soils that are frequently ponded for long duration or very long duration during the growing season, or

4. Soils that are frequently flooded for long duration or very long duration during the growing season.